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THE subject of chemical nomenclature is attracting much attention just now, the note by Prof. JOHN ATTFIELD in a recent issue of this journal having aroused the interest of many scholars on the subject. It is with pleasure, therefore, that we lay before our readers elsewhere in this issue the views of the leading pharmaceutical philologists of this country. From these notes it will be seen that the attitude taken as to chemical nomenclature in the new edition of the U. S. Pharmacopœia is a well-considered and defensible one.

## THE TABLET-TRITURATE INDUSTRY.

THE announcement of the consolidation of two well-known firms of tablet triturate manufacturers in this city, together with the rumor that there is a probability of still another concern engaging in the manufacture of triturate and compressed tablets on their own account, serves to direct attention anew to a cause of much dissatisfaction among retail pharmacists.

We refer to the increasing use by physicians of medicines in the tablet form and the corresponding diminution of the prescription dispensing business of pharmacists which has followed as an apparently natural consequence. That the dissatisfaction does not spring wholly from motives of pecuniary loss or gain, and is prompted largely by the natural regard of the pharmacist for the maintenance of his reputation as a purveyor of *definite* medicinals, has been evinced in many ways; but never so signally, perhaps, as by the action of the King's County Pharmaceutical Society (Brooklyn), at their meeting held on the evening of Tuesday, November 14, when a committee was appointed to examine and report upon the triturate and compressed tablets of the market, with especial reference to relation of contents to label as well as to the stability of certain drugs put up in this form. The gentlemen appointed on this committee are JOHN PFEIFFER and W. J. HACKETT, and as they are both skilled pharmaceutical chemists an interesting report may be looked for.

## AN OLD FRIEND WITH A NEW FACE.

MOST physicians and a good many pharmacists become impressed at different periods of their respective careers with the possibilities of pecuniary advantage that are supposed to lie in the formation of pharmaceutical companies. However, as these ideas seldom pass beyond the visionary stage, little harm is done.

In Brooklyn there is a concern known as the "Physicians' and Surgeons' Pharmaceutical Company," which proposes to make a specialty of prescription dispensing. The board of directors of the new company is said to be made up of physicians and pharmacists, one of the leading spirits in the new organization being, according to report, an ex-professor of pharmacy. While former concerns of this kind have restricted their operations to "the manufacture of reliable chemical and pharmaceutical preparations," with the avowed object of affording "physicians an opportunity of sharing in the legitimate profits of the manufacture by becoming stockholders of the company," the one we have reference to proposes to confine its attention to prescription work only, and has made preparations to start an extensive pharmaceutical establishment where the prescriptions of the members can be compounded and the profits accruing therefrom be divided among themselves. To the retail drug trade of Brooklyn this will indeed be a blow—but not perhaps in the sense anticipated by the promoters of the new scheme. Its first effect will probably be to prejudice people against the physicians who may connect themselves with the new enterprise, and this will be strengthened by the natural dislike of the individual for monopolies and combinations of any kind

## REVISION OF THE TARIFF.

THE leading topic of the hour in commercial circles is the probable change in the tariff. The hysterical maunderings of CHARLES ACATALEPTIC DANA in the New York *Sun* over the free trade bill, which as a "portion of the party platform must be passed at once," carry no weight with them. The reports so far made as to the plans of the Ways and Means Committee indicate that the necessity of providing an increased revenue is to be kept steadily in view.

The wool, iron and coal trades will of necessity be very materially affected, as the dominant party is practically pledged to free raw materials, and the bounty on sugar will also no doubt be repealed. The schedule of changes to be made in import duties, so far as discussed, embraces nothing that will very materially affect the drug and chemical trades. The classifications of some lines of druggists' fine chemicals will very likely be changed, thus bringing them in at a somewhat lower rate, but the changes recommended will be more in the line of simplification of the schedules than of radical alterations in the rates.

There is in the minds of our legislators at Washington a good deal of that respect for "Schedule A," (embracing chemicals) which is born of ignorance. Experience has taught them that "Schedule A" is a dangerous thing to handle. We understand, however, that Chairman WILSON of the present Ways and Means Committee has the advantage of some experience in, and knowledge of pharmacy, and this knowledge will, no doubt, be of value in preventing the committee from committing any of those ludicrous blunders which have occasionally crept into the tariff legislation.

Neither importers nor manufacturers of drugs and chemicals have so far evinced any active interest in the proposed changes, though a few have been consulted by ex-Secretary Fairchild.

The most vital point at stake for the drug trade is that of the tax on alcohol. In the face of a large deficit, the Ways and Means Committee have been casting about for some method of increasing the income of the government. The increase of the tax on alcohol was agitated last year, and, as will be recalled by our readers, we took pains to point out at the time the great injustice which such an increase would work, and also how the existing stocks of alcohol would be so manipulated that practically every dollar of the increase would go into the pockets of the whisky trust and dealers, and not into the coffers of the government. Notwithstanding this it is proposed to advance the tax from 90 cents to $1 per proof gallon. An increase on fermented liquors and on tobacco will probably also be made.

It is of the greatest importance to the drug trade and also to many lines of manufactures that if any change be made in the tax on alcohol such change be toward a lower rate of taxation, for while alcoholic liquors are luxuries when used as beverages, alcohol when used in the manufactures—and the bulk of it is used for medicine and for manufacturing purposes—is simply a crude material of prime importance which we are unfortunately as yet unable to find a satisfactory substitute for.

Whether the income tax on which it is proposed to depend for an increased revenue is the best thing for the country at large may be open to question. But a tax which affects no income below $4,000—and that is the figure contemplated—would probably affect but a small proportion of the retail druggists of the United States.

## PROFITABLE ENTERTAINMENT AT PHARMACEUTICAL MEETINGS.

THIS is the season of the year when active officers of pharmaceutical associations begin to consider ways and means of making coming annual meetings the successful affairs that all pharmaceutical meetings should be.

The social features of any gathering of individuals held in vacation time or under favorable conditions as regards season of the year and weather are yet regarded as of first importance by most organized bodies of American pharmacists. Many of the members of the different associations would like to see pharmaceutical science made more of a feature of the annual meetings. It is urged, however, by a few clear-minded individuals that this wished for blending of science with entertainment is not likely to be best obtained by a too free contribution of papers relating to subjects of technical interest only. As viewed by some members, the plan which appears to give the greatest promise of success is that which provides for particular and fitting mention of the newer additions to materia medica, either in the form of an annual report drawn up by a committee appointed specially for this purpose, or by an exhibition of samples of the drugs and chemicals introduced during the year.

The New York Pharmaceutical Association has a Committee on New Remedies, the outcome, we believe, of a motion made by C. H. SAGER when he was president of the association in 1888. In outlining the scope of the proposed committee he suggested that its duties should be to prepare a report on the additions to the materia medica during the year; and he also proposed that samples and specimens of these new remedies be placed on exhibition at the annual meetings of the association. Following this recommendation a comm ttee was appointed composed of DR. ROBERT G. ECCLES, WILLIAM ANGELL VIALL and CHARLES K. BROWN, and their "Report on New Remedies," for 1890, has come in for well merited praise and is still used as a reference guide by members of the association. The committee for this year is composed of JAMES HUTCHENS, DR. GRAY and CHAS. F. SCHLEUSSNER.

The example of the Empire State Pharmaceutical Association is a good one and should be followed freely by other associations not already committed to this plan of arousing increased interest among their members.

The compiling of a report of this kind, in which the interest might be heightened by an exhibit of the different products (the latter to be held in one of the rooms of the meeting-place), would be a matter of the simplest kind, as the various American manufacturing chemists and representatives of foreign manufacturing chemists would doubtless be glad to have the privilege of co-operating and contributing, and samples of the newer remedies for exhibition purposes could probably be had for the asking.

## ENDOWMENTS FOR PHARMACEUTICAL EDUCATION.

SOME years since, when the plans for the establishment of the Leland Stanford University were first made public, the writer urged upon the late Senator STANFORD the claims which pharmacy had to recognition in the organization of just such a school as was contemplated at Palo Alto. The central idea of the university as then announced was to fit its students for the active struggle which follows on entering into one's life-calling; therefore it was urged the establishment of a course in pharmacy would be directly in line with the general aims of the institution. In laying these claims before the Senator the general status of American pharmaceutical education was outlined and the desirability of encouraging advanced studies in pharmacy was pointed out.

While non-commital as to the possibility of adding a pharmaceutical department later on, Senator STANFORD stated that the plans already adopted for the institution would require for their execution all of the funds at that time at the disposition of the university.

The matter is now called to mind by a suggestion in a contemporary that the Leland Stanford University is in a position to establish a model school of pharmacy independent of pecuniary considerations.

In view of the circumstances noted above it seems hardly probable that the university will at least in the near future engage in the teaching of pharmacy, but the occasion serves to again direct attention to the fact that pharmaceutical education has been carried on solely by pharmacists themselves and without any of those endowments which have been so richly bestowed upon literary, medical and other scientific schools.

There are those who believe that the cause of pharmaceutical education is better off without pecuniary aid from extraneous sources, who contend that the acceptance of such aid would weaken instead of strengthen the cause, and who point to one or two endowed universities whose departments of pharmacy have played but a minor rôle in the field of education.

In response to these critics we would say that the comparative failure in the few cases mentioned are attributable to causes outside of and entirely independent of the mere matter of endowment.

In one most notable instance, that of the pharmacy department of Cornell University, the failure arose from the incapacity of the university authorities to comprehend the importance attached to the practical side of the pharmacists' studies and from a petty jealousy on the part of the controlling element of the alumni of the institution, who were opposed to recognizing the graduates of the pharmaceutical department as alumni of the university.

The career of the School of Pharmacy of the University of Michigan is as distinguished a success as the Cornell school was a notable failure, and we thus learn that State or endowed university aid is not incompatible with the success of the school of pharmacy.

The greatest good to the cause of advanced pharmaceutical education, however, is not to be had from the establishment of new schools, but from the improvement, both material and intellectual, of those now in existence. Dependent for their support upon the students' fees as are the larger schools, a marked deference must be paid to the wishes of the students in the adjusting of the curriculum. This deference is none the less real for not being readily apparent. There is an earnest desire upon the part of the teachers in these schools to elevate the grade of requirements for graduation, and to widen and deepen the attainments of their pupils, and this desire has made itself practically manifest within the past decade, as can readily be noted by comparing the character, the amount of instruction given, and the requirements for graduation now, with what they were ten years since.

This elevation has merely kept pace with public sentiment among pharmacists. It has followed rather than led that sentiment. Any too sudden forward step on the part of one of these independent colleges would have proven almost fatal, cutting off the students and fees necessary to the conduct of the school. It is true that this enforced conservatism has not been without its advantages, for it has built up the schools on a solid basis and has kept them in intimate touch with the practical side of pharmacy. So far, however, the pecuniary condition of these independent colleges has made it impossible for them to render that substantial aid to advanced study which is offered, for instance, by the scholarships and teaching fellowships of the Johns Hopkins University.

The lack of this aid drives aspiring American students abroad every year. With the governmental support of the university schools and with cheap living possible in Germany, an advanced student can go to Berlin, Bonn, Weisbaden or Göttingen and pursue his studies to better advantage and more economically than he can in the United States.

What is really needed is the establishment in each of the leading independent colleges of three-year post-graduate scholarships having incomes of four or five hundred dollars attached thereto.

Here is an opportunity for the educational philanthropist. There is no field of science more closely concerned with the conservation of the material welfare of the race than is pharmacy, and by aiding in the higher education of pharmacists additional safeguards will be thrown around the health of the entire community.

## CHEMICAL NOMENCLATURE OF THE NEW U. S. PHARMACOPŒIA.

In the issue of October 26 we published a brief note from Prof. John Attfield, reporter on the pharmacopœia to the British Medical Council, in which attention is called to the incongruity of the chemical nomenclature of the new U. S. Pharmacopœia in having the Latin title and the English synonym in different cases, as, for instance, *Magnesii sulphas*, magnesium sulphate, instead of a translation of the Latin, which would be "sulphate of magnesium." Professor Attfield hold's that, if it be considered advisable to follow the newer methods of nomenclature, this could be done by following the example of the Germans, who put both Latin and German in the same case, saying *Magnesium sulphuricum*, magnesium sulphate.

The matter having been called to their attention, several of the leading pharmaceutical chemists of this country have favored us with their views upon the subject, and these views we present below.

### A DIFFERENCE AS TO GRAMMATICAL CONSTRUCTION.

You ask me to express my views regarding the point raised by Professor Attfield in the letter which you sent me for perusal previous to its publication, but part of the contents of which were already known to me from a letter addressed to me personally by Professor Attfield. In complying with your request, I wish it to be understood that I give only my personal views, irrespective of those of other members of the Committee of Revision.

Professor Attfield is of the opinion that the English titles of chemical sal's should be exact grammatical equivalents of the Latin ones. Thus, that "*Magnesii Sulphas*" should be rendered in English by "sulphate of magnesium," the Latin genitive "*Magnesii*" being expressed by the English genitive "of magnesium." Further, it appears that he regards the English term "magnesium sulphate "as grammatically equivalent to the German-Latin "*Magnesium sulphuricum*." I hold a somewhat different opinion. In my judgment the word "magnesium" in the term "magnesium sulphate" has the function of an adjective and is equivalent to "magnesic," consequently the true equivalent in Latin of "magnesium sulphate" (or "magnesic sulphate") seems to me to be "*Magnesicus Sulphas*," in which the basylous constituent appears as an adjective, and not "*Magnesium sulphuricum*," where the base appears as a noun. But aside from this, even if it be conceded that "magnesium sulphate" is not an exact literal translation of "*Magnesii Sulphas*," it must be regarded as an advantage to have the Latin and English titles coincide so closely in most cases. This coincidence is most striking when these titles are abbreviated. Moreover, the new English nomenclature ("sodium bromide," etc., instead of "bromide of sodium") brings all the salts of a base together under the name of that base, while the old method ("bromide of sodium," instead of "sodium bromide") scatters them through the names of the different acids, or halogens, etc., unless the terms are inverted on purpose ("sodium, bromide of," etc.).

It is scarcely to be expected that physicians in this country will, in the near future, prescribe medicines by their *English* instead of by their Latin names. There are several strong reasons for retaining the Latin language to designate the ingredients of a prescription. and these reasons are so well known that they need not be mentioned here. But if the Latin is continued to be used for this purpose, it is highly advisable to make as few changes in it as possible because physicians are loath to change the nomenclature to which they have become accustomed. For this reason any effort to approximate the names of chemical substances to modern scientific theories should rather be confined to the *English* titles, though, of course, the Latin ones are not likely to escape altogether, and no harm will be done, if, in this manner, the strict grammatical correlation of the English and Latin titles is somewhat disturbed On the one hand, the Latin title will take account of the conservative tendencies of the writers of prescriptions; and on the other hand, the English title will bear the imprint of the progress of science. Truly, as Professor Attfield says, the English equivalent will, in many cases, be a compromise. But there need be no objection to this, so long as the term is clear, precise, and not likely to be misunderstood.

CHARLES RICE.

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### LATIN THE UNIVERSAL LANGUAGE OF SCIENTIFIC NOMENCLATURE.

The Pharmacopœia Committee, in my estimation, has pursued the only and best course in the rendering of the English titles of the monographs. I do not favor a too literal translation of the Latin headings, for in such instances as above, they prove very cumbersome and impracticable. The English terms should correspond to the modern chemical nomenclature as nearly as possible. Prof. Attfield is evidently mistaken if he understands this to be preliminary to the abandonment of Latin nomenclature. Such a step would be absolutely ridiculous; just imagine the Pharmacopœia title "Gum Tragacanth"—synonym "devil's toe nails."

Latin has always been the universal language in scientific nomenclature, not only because it is intelligible to every nation, but being a dead language is not subject to the variation and changes peculiar to modern tongues; this is particularly the case with English. To illustrate this, I understand that one of the graduating classes of medical students in Baltimore adopted a resolution in which it was agreed to employ English terms only, in writing prescriptions. Now let us suppose that one of the class would prescribe, for example, fluid extract of snake root, what would the apothecary dispense? He would have to take his choice between Virginia snake root (*Aristolochia serpentaria*) black cohosh (*Cimicifuga racemosa*), seneka root (*Polygala senega*), button snake root (*Eryngium aquaticum*), or Canada snake root (*Asarum canadense*). This would all depend in what part of the country the physician might reside; then in such a case it would be advisable to state the residence of the prescriber, so that the doubt might be lightened.

Again say he prescribed fluid extract of Indian hemp, then it would remain for the apothecary to inquire of the patient and ascertain whether he required the *Apocynum Cannabnium* as a diuretic and diaphoretic, or the *Cannibis Indica*, a narcotic—all this for the sake of a prescriber who is too lazy to learn a few Latin terms.

Let him prescribe corrosive sublimate and then witness the consternation of the patient, when on reading the prescription, he learns that he is being treated with bed-bug poison. Popular prejudice will soon deprive the framers of such resolutions as the above of what practice they may have gained. Upon the whole the idea of the abandonment of Latin in pharmaceutical nomenclature is too absurd to demand any further consideration.

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SIMPLY AN EXTENSION OF A LONG CONTINUED AND WELL ESTABLISHED PRECEDENT.

In the AMERICAN DRUGGIST AND PHARMACEUTICAL RECORD of October 26, 1893, on page 238, appears a note by Prof. John Attfield, criticising the nomenclature of chemical compounds in the United States Pharmacopœia as follows:

"The English rendering—I cannot call it translation—of the title has been turned around so as to harmonize with the practice of the majority of modern chemical authors. Thus, for example, it is no longer sulphate of magnesium, but magnesium sulphate. From the literary point of view it is awkward, if not solecistical, for the Latin heading to express one name, and the English immediately underneath it to express another name; nevertheless I think that the compilers were wise, as well as politic, in making what the majority of mankind so dearly love—a compromise. They might have continued to give such names as *Magnesii Sulphas*, sulphate of magnesium, or with the Germans, have given *Magnesium Sulphuricum*, magnesium sulphate. They have steered a middle course preliminary, doubtless, to an abandonment of the Latin channel altogether."

The change in nomenclature adopted by the Committee of Revision of the U. S. P., as described in the preface to that work, consists "in the designation of chemical compounds (oxides, salts, etc.), in which it is now customary to put the basylous or metallic component first, viz., sodium chloride, silver nitrate, lithium bromide, lead oxide, etc., instead of writing chloride of sodium, nitrate of silver, bromide of lithium, oxide of lead, etc."

The abandonment of the Latin nomenclature probably never entered the mind of any member of the Committee of Revision in making this change, such change having been made doubtless with the sole view of being in accord with the nomenclature adopted by modern chemists and chemical authors; such an abandonment would no doubt be looked upon as a great misfortune by the great majority of educated physicians and pharmacists.

In thus changing the English names, the basylous or metallic component of the name has been used as an adjective instead of a noun, and this is in strict accordance with English usage; thus we say a silver plate, a copper wire, an iron nail, etc., much more frequently than we say a plate of silver, a wire of copper, a nail of iron. Why then should we not say "a silver nitrate" instead of "a nitrate of silver," or "a copper sulphate," or "an iron oxide," instead of "a sulphate of copper," or "an oxide of iron"?

Moreover we find that this custom has always prevailed, not only in the U. S. P. but also in the British Pharmacopœia. Thus in the U. S. P. we find all the "*Aquæ*" are translated in this way—that is, by using the adjective form—and in this last revision, "water of ammonia" has been changed to "ammonia water"—thus making it correspond with all the rest. So with all the cerates, excepting "*Ceratum plumbi subacetatis*," in which the genitive case in English is used, it being translated "cerate of lead subacetate."

The same use of the adjective translation appears in all the "*Chartæ;*" in all the "*Emplastra;*" in all the "*Linimenta*" but two; in two of the "*Misturæ;*" in several of the "*Olea;*" and in 11 out of 23 "*Unguenta.*"

In the British Pharmacopœia we find that this adjective translation is used in all the "Roots," "Fruits," "Leaves," "Flowers," "Barks," and "Seeds;" as well as in all the "Pulps," "Plasters," "Poultices," "Suppositories," "Troches," and "Waters." In all of these I believe there is no exception.

Thus we see that this use is simply an extension of a long continued and well established precedent.

If it should be deemed advisable to change the Latin chemical names to correspond with the English names as adopted, it might very readily be accomplished by giving an adjective termination to each elementary substance; thus we might say "*Chloridum Sodicum*," "sodium chloride;" "*Nitras Argenticus*," "silver nitrate;" "*Bromidum Lithicum*," "lithium bromide," etc.

If such names were adopted when there were two or more salts having the same base, the difference should be shown by prefixes to the acidulous component, and not to the basylous or metallic one, and this system should be followed in the English as well as in the Latin names; thus, we might say, "*Sulphas Ferricus*," ferrum sulphate or iron sulphate; "*Disulphas Ferricus*," ferrum disulphate or iron disulphate, and not as at present—ferrous sulphate and ferric sulphate.

The name "*Balsamum Peruvianum*" and "*Balsamum Tolutanum*" are not translated correctly. The English names should be "Peruvian," or better "Peru balsam" and "tolu balsam;" Peruvianum and tolutanum being adjectives. Both of these substances have been official in every U. S. P., commencing in 1820. Peru balsam had the Latin name "*Myroxylon*" in the pharmacopœias of 1820, 2830 and 1840; while tolu balsam was called *Tolutanum*" in 1820 and 1830, with the English name "tolu." In 1840, although the Latin name "*Tolutanum*" was retained, it was called in English "balsam of tolu." In 1850 both names were changed, and since this date they have been called respectively, "*Balsamum Peruvianum*" and "*Balsamum Tolutanum*," with the English names "balsam of Peru" and "balsam of tolu." These Latin names were doubtless given in order to make a correspondence between the two. In the case of "*Balsamum Tolutanum*" the word *Balsamum* should be left off, thus restoring the old name "*Tolutanum*" with the English "tolu." In fact these names only are now used in the preparations of these substances; thus we say "*Syrupus Tolutanus*," "syrup of tolu," and "*Tinctura Tolutana*," "tincture of tolu," the word balsam being entirely omitted both in English and Latin.

ALBERT B. TAYLOR.

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THE ENGLISH A SYNONYM FOR, NOT A TRANSLATION OF THE LATIN.

So far as I am aware the change of the English titles in the new U. S. Pharmacopœia was not in any way influenced by a desire to abandon or even discredit the Latin. The intent was to have these titles in harmony with the nomenclature of progressive chemists. We could not adopt all the innovations proposed, but this one having decided advantages was accepted. "Mercuric chloride" is shorter and its meaning more distinct than "chloride of mercury." "*Magnesii sulphas*" might have been changed to "*magnesium sulphuricum*," so as to have had our English appear as is translated from the Latin, but this was not the intent. The two stand as independent now as if the English had been "Epsom Salts." The first is the Latin name as adopted by many pharmacopœias in common with our own. The second is the American-English name for the same article.

There is no compromise. It is not intended as a translation. The Latin name is maintained for the benefit of medical men who wish to prescribe in Latin, as a hereditary mark of the original Latin pharmacopœia from which ours descended, as an aid to foreigners who wish to consult our book, as a ready means of discovering the contents alphabetically because of the Latin habit fixed upon us in the past and as a protection to the traveling public who are having prescriptions compounded by country pharmacists who know no Latin but are guided to the article by their pharmacopœia.

Had any translating been done the proper course would have been to translate the English into Latin and made that the Latin title. Then, however, our Latin would have disagreed with that of our British

cousins and no end of confusion have arisen by the change of case. Latin titles may ultimately be abandoned altogether as suggested by the professor, but for the reasons above given as well as from the fact that the ancient is the ornamental of the present my protest would go against any act so radical. R. G. ECCLES.

### A COMPROMISE.

The subject of pharmacopœial nomenclature is only in its formative stages. Like similar attempts to construct specific language for established sciences, it must be a constant compromise between a definite terminology and such changes as the practical application or acceptation of its development may admit of. Unlike the newer branches, electricity, bacteriology, etc., chemical terms must grow slowly and deliberately in order to avoid confusion.

There is no especial necessity for the English title to be a translation of the Latin title any more than that the English names should be translations of the titles, or that the synonyms should be derived from the names. The nomenclature must be constructed from changes in the common names upward.

First, a distinction should be made as follows:

| | | Example. |
|---|---|---|
| Title, | Latin, | Magnesii sulphas. |
| Title, | English, | Magnesium sulphate. |
| Name, | English, | Epsom salt. |
| Synonym, | | Bitter salt. |

As to the suggestion that the Latin titles be abandoned in the pharmacopœia, that is a proposition too absurd for consideration. Our only hope for insuring something like uniformity in pharmacy as well as in all other sciences lies in the adoption of Latin or other dead languages in the construction of nomenclatures.

C. S. N. HALLBERG

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### THE CHANGE AN IMPROVEMENT.

As a chemist, and above all a chemical teacher, interested in the general acceptance of exact chemical phraseology, according to modern views, I cannot but approve of the substitution of terms like "magnesium sulphate" for "sulphate of magnesia." The latter was a relic of the older chemical or dualistic views when the base magnesia was supposed a necessary prerequisite for the formation of a magnesium salt, when MgO and $SO_3$ were supposed to unite to form the salt in question. With the clearer understanding of the distinction between the oxygen acids and their anhydrides, this view was given up for the present view of formation of oxygen salts by substitution, or replacement of the hydrogen of the acid by metal or basic radical. This view is moreover the one which allows us to explain the results of the electrolysis of metallic salts, whether fused or in aqueous solution, the most readily. So I approve of "magnesium sulphate."

Now as to the corresponding Latin term. If we are to have a Latin designation for such chemical salts as are official and hence subjects of discussion in the pharmacopœia, I would still prefer "*magnesii sulphas*" to "*magnesium sulphuricum*." The latter term is too ponderous and is unfamiliar to the ordinary practitioner in medicine and pharmacy, while the former has the advantage of being an old acquaintance. Again, while the literal translation of the present Latin term would give us "sulphate of magnesium," it would not give us "sulphate of magnesia," which is the old objectionable term of the older pharmacopœias. So I am not as disturbed as Prof. Attfield seems to be at the conjunction of terms in the new edition of the pharmacopœia.

As to the utility of retaining the Latin designation in the case of definite chemical salts of well defined character like magnesium sulphate, I suppose we must defer to the preferences of the doctors who write prescriptions and whose conservatism will not allow as yet of the laying bare of their directions to popular gaze by the use of English terms.

SAMUEL P. SADTLER.

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### A SYNONYM—NOT A TRANSLATION.

I agree with Professor Attfield, of course, that "Magnesium sulphate" is not a good translation of "Magnesii sulphas." I do not think the revisers of the U. S. P. intended it to be a literal *translation*, but rather a *proper synonym*. As a synonym I think it better than "sulphate of magnesium" would be. Synonyms need not be literal translations of official titles.

It may be correct to say that from a "literary point of view this rendering of chemical synonyms is awkward if not solecistical," but I do not think scientists will severely criticise a work like the U. S. P. from a literary standpoint any more than a literary man would severely criticise a literary work from a scientific standpoint.

The German method "Magnesium sulphuricum" has many advantages not least among which is the matter of indexing. I shall not have time to enlarge upon this.

As to the abandonment of Latin altogether, I do not think the tendency is that way. Our pharmaceutical titles as a whole would suffer, and, in my opinion, if Latin were to be abandoned, confusion would be inevitable.

L. E. SAYRE.

University of Kansas.

## Toxins and Antitoxins.

It is stated by Dr. Kanthack, in the *Medical Chronicle*, that the specific action of pathogenic bacteria has been shown, during the past few years, to be due to toxalbumins instead of ptomaines or poisonous bases, as was formerly supposed, and it was assumed that these toxalbumins were formed from albuminous substances existing in the body, as a result of the activity of bacteria. They are considered by Buchner (*Münch. med. Wochen*), however, to be direct products of bacterial cells, and he has proved this in the case of tetanus, by growing the bacillus on a solution of asparagin. Since asparagin cultures produced the typical, tetanic lesion in animals, it seemed clear that the toxalbumin formed must have been derived directly from the bacterial plasma. Though no toxalbumins have yet been separated in a pure state, they are known to react like the enzymes and so-called alexins or protective proteids. In a moist condition, they are generally destroyed by a temperature of 55° C. to 70° C., though resisting much higher temperatures when in a dry state, while neutral salts, such as the sulphates of alkaline bases, which limit the action of water, will also increase the resistance. Buchner further suggests that antitoxins, as well as toxins, are probably bacterial products. Antitoxins act by establishing in animals immunity to specific diseases. They appear to remain stored up in the organism after the toxins have been rendered harmless, even when administered in the exact proportion to effect neutralization of the latter. Probably, therefore, toxins and antitoxins do not react directly on each other, and the latter, acting by immunization, have no direct curative action.

*(Written for the American Druggist and Pharmaceutical Record.)*

## WINTER SPECIALTIES.

By Elbert E. Fisher, Ph.G.

Winter medicines are now in order, and the pharmacist who aims to keep abreast of the times and is enterprising is busying himself at the moment in bringing the specialties of his own make to the front.

While no attempt will be made in this article to bring forward a *complete* list of the medicines popular at this season, mention will be made of the cough syrups, cod liver oil compounds (including the wine), and the stimulating preparations of wine and coca, in popular demand.

Cough mixtures naturally demand first attention and the formulas given below will be found to afford really good and tried mixtures which can be disposed of at a profit.

### WIGGINS' SPRUCE GUM SYRUP

is a name which can be applied to a syrup of spruce gum which is much called for in some localities and is prepared as follows :

| | |
|---|---|
| Tincture of red spruce gum | fl. ℥ ij |
| Sugar | ℥ xxviiav |
| Water | O i |
| Caramel | ℥ i |
| Fuller's earth | ℥ ii |

Mix two ounces of the sugar with the tincture of spruce and Fuller's earth, rub well and add the water in divided portions ; then filter, returning the filtrate until it comes through clear ; add the caramel and sugar, which dissolve with a gentle heat, and strain while warm.

A syrup of a different and richer appearance may be made by mixing equal parts of the syrup prepared as above and syrup of wild cherry of the U. S. Pharmacopœia.

### TINCTURE RED SPRUCE GUM.

This tincture is best prepared according to the following formula :

| | |
|---|---|
| Red spruce gum (in fine powder) | ℥ ij |
| Alcohol, q. s. | Oi |

Macerate until dissolved and filter.

### CHLORODYNE OR PULMONIC SYRUP.

This furnishes a most efficient compound and is prepared as follows :

| | |
|---|---|
| Tincture of cannabis indica | fl. ℥ iii |
| Tincture of tolu | fl. ℥ ii |
| Oil of peppermint | fl. ℥ i |
| Morphine sulphate | fl. ℈ i |
| Chloroform | fl. ℥ iv |
| Fluid extract of lobelia | fl. ℥ i |
| Water | fl. ℥ iiv |
| Syrup, q. s. ad | fl. Ov |

Mix the tinctures of tolu and cannabis indica with the chloroform and oil of peppermint, dissolve the morphine in the water, add this solution to the foregoing, shake thoroughly, and lastly add the syrup.

This furnishes a greenish-opalescent syrup of a pleasant flavor which finds many favorites. The syrup may be bottled in two and one-half or three ounce panels to be sold for 25 cents. The total cost to the maker, including bottle, cork, medicine and label is about 10 cents,

Many people like a cough mixture containing oil and having the appearance of an emulsion. The formula given below will produce an almond oil emulsion which is already prepared for sale by many druggists.

### HYATT'S EMULSION FOR COUGHS, ETC.

| | |
|---|---|
| Sweet almond oil | fl. ℥ ii |
| Syrup of acacia | fl. ℥ x |

M. *ft. emulsio et adde*

| | |
|---|---|
| Chloroform | fl. ℥ ii |
| Morphine sulphate | gr. iv |
| Syrup of tolu, q s. ad | Oi |

Mix thoroughly.

This can be put up in the same way as the chlorodyne compound, or for a change may be sent out in four ounce panels and sold for 35 cents, which affords even a larger profit than the preceding preparation.

### LINSEED COUGH MIXTURE.

Linseed oil is very often prescribed by physicians in the treatment of pertussis and colds, and a mixture prepared according to the formula given below is deemed by many to be of particular value :

| | |
|---|---|
| Linseed oil | fl. ℥ iv |
| Powdered acacia | ℥ iv |
| Mucilage of Irish moss | fl. ℥ ii |
| Syrup | fl. ℥ iiss |
| Glycerin | fl. ℥ i |
| Oil of cassia, Oil of wintergreen, Oil of sassafras, aa | fl. ℥ ss |
| Chloral hydrate | ℥ iv |
| Diluted hydrocyanic acid | fl ℥ ss |
| Morphine sulphate | gr. ii |
| Water, q s., ad | Oi |

M. *ft. emulsio.*

Any number of cough mixtures may be made from the above type, and no fear may be entertained that they will not afford satisfaction.

### CHERRY COUGH SYRUP.

This is an agreeable and pleasant syrup composed of :

| | |
|---|---|
| Syrup of squill | fl. Oi |
| Tincture of blood root | fl. ℥ vi |
| Tincture of opium | fl. ℥ iv |
| Ammonium chloride | ℥ i |
| Syrup of wild cherry, q.s. | Oiv |

It is a profitable idea to expose for sale on the glass show case syrup of hypophosphites in bottles of distinctive design ; for while many people have no elevated idea as to its value the fact remains that there are others who pin their faith to it. Many mothers want it for their children, and it has the advantage over other syrups in not having a bitter taste. The writer would recommend a smaller size than is usually placed by wholesalers to be put up in connection with the larger size retailing at $1.00. A six-ounce bottle to sell at 50 cents, when put up by the retailer, affords a fair margin of profit. A full pint for a dollar is always a good drawing card with the public, as it compares to advantage alongside of the twelve ounce package of the large dealer. For a syrup hypophosphites the U. S. P. formula is advised, though coloring substances may be added at the discretion of the maker. For the latter purpose hydrastis, eucalyptol, terebene, etc., may be used.

### COD LIVER OIL COMPOUNDS.

So many essays have appeared in the journals on the preparation of cod liver oil emulsions that it is presumed every druggist has a recipe of his own. To those who do not manufacture their own emulsion of cod liver oil no better advice can be given than to begin at once. Its preparation is easy and there is much profit and satisfaction in selling a good preparation.

A "tasteless" compound of cod liver oil is something which is always in demand to more or less extent, and the formula which I bring forward, when rightly manipulated, furnishes a product which places it clear in the first rank of "tasteless" preparations of cod liver oil.

### ARTHUR'S PERFECTED PREPARATION OF COD LIVER OIL.

| | |
|---|---|
| Fluid extract of wild cherry | fl. ℥ ii |
| Fluid extract of licorice | fl. ℥ iii |
| Glycerin, Syrup, aa | fl. ℥ i |
| Liquid extract of malt | fl. ℥ vi |
| Syrup hypophosphites | fl. ℥ iii |
| Guaiol | gr lxiv |
| Fuller's earth | ℥ iv |
| Caramel, q. s. as desired | |

Mix the gaduol with the glycerin and rub with the Fuller's earth; then add the fluid extracts, syrup and malt, shake well, let stand one day, occasionally shaking and filtering. To the filtrate add the syrup hypophosphites and mix well.

Should the resulting product not quite come up to the expectations of the compounder a slight modification of the formula in regard to the quantities of some of the ingredients, such as the fluid extracts and glycerin, will result in a different appearing compound.

WINE OF COCA.

The Boston formula for this preparation is thought most highly of, and the formula given below will turn out a compound closely resembling it:

*Wine of Coca.*

| | |
|---|---|
| Port wine, } aa | Oiv |
| Claret wine, } | |
| Sugar | ℥ xxii |
| Alcohol | fl. ℥ xxxviii |
| Fluid extract of coca | fl. ℥ iss |

Let stand two weeks and filter.

The addition of beef to a compound of this order is very highly esteemed in some quarters and is thought to afford a more nourishing and stimulating preparation. I would suggest a combination as follows:

*Wine of Coca with Beef.*

| | |
|---|---|
| Liebig's extract of beef | ℥ vi |
| Wine of coca, q. s. | Cong. j |

Let stand about three days and filter.

Each fluid ounce of the above will represent about two-thirds of a fluid ounce of lean beef. This makes an elegant preparation which commends itself readily to buyers, presenting as it does in pleasant combination two well known articles of medicinal value.

WINE OF CODLIVER OIL.

Wine of codliver oil is having a run just now, and for its preparation I have found these formulas of excellent value. The formula given first contains the active principles of codliver oil as isolated by French chemists; it reads as follows:

*Wine of Codliver Oil.*

| | |
|---|---|
| Gaduol (Merck's) | gr. lxiv |
| Alcohol | fl. ℥ iv |
| Syrup | fl ℥ ii |
| Fuller's earth | ℥ iv |
| Port wine, q. s. ad | Oi |

Mix the gaduol with the alcohol and add the Fuller's earth; rub well together, then add the syrup and wine. Let stand a day or so, shaking occasionally, then filter, passing sufficient wine through the filter to preserve the volume. If these directions are followed the product will be an elegant preparation, resembling but a little sweeter than other preparations of the same name.

A preparation of the same character but of a more distinctive taste and appearance may be compounded as follows:

*Tart Wine of Codliver Oil.*

| | |
|---|---|
| Gaduol | gr. lxiv |
| Alcohol | fl. ℥ iv |
| Fuller's earth | ℥ iv |
| Port wine, } aa p. e., q. s. ad | Oi |
| Claret wine, } | |

Proceed as before.

Compounds prepared as above contain 25 per cent. of the active medicinal principles of codliver oil. The first is the pleasanter preparation of the two, but both are certain to give satisfaction.

*(Written for the American Druggist and Pharmaceutical Record.)*

## HOT SODA FLAVORS.

By Thomas Warwick.

The man who first invented hot soda water deserves a vote of thanks from the community in general and from the druggist in particular. In fact the prohibitionists should nominate him for president at the next election, for it is an undeniable fact that the craving for stimulants is greatest in the Winter time, and that the increase of hot soda drinking must necessarily diminish the demand for alcoholic liquors. Moreover, so far as solid comfort goes, when the thermometer is hiding below zero, no stimulant can equal a good nourishing mugful of "hot bouillon."

Yet hot soda water had a hard struggle to obtain a place at the dispensing counter. Although over thirty years on the market, it was almost unknown to the general public until a few years ago, when it first began to come into notice, and has been yearly growing in popularity ever since, so that nowadays it can be found in all large cities, and the fact that the hot soda trade may be made remunerative will be seen when I state that in Hudnut's pharmacy in New York city, the sales of hot soda on a cold Winter's day average about from 1,500 to 2,000 glasses, which represents quite a neat little daily profit.

The flavors in demand at the hot soda counter vary with the season. During the month of October, and again in the month of March, when the weather is relatively mild, hot chocolate and hot coffee are the favorite drinks, but as soon as the really cold weather sets in the demand for "bouillon" and for clam juice increases with astonishing rapidity. Hot chocolate, hot coffee and "bouillon" are the three great staples of the hot soda trade, and in fact at Huyler's counters, where the soda water sales are probably as great as in almost any other establishment in the United States, the hot soda drinks are confined almost exclusively to these three flavors.

What is still more curious is the fact that these three flavors are patronized almost equally by the men and the women. The only difference seems to be that the majority of ladies prefer chocolate to coffee, whereas the majority of men prefer coffee to chocolate. The reason seems to be that the coffee is not so much sweetened as the chocolate. Thus at Huyler's, where the customers are almost all ladies, much more hot chocolate is sold than coffee, while at Hegeman's and Hudnut's, where the customers are principally business men, the sales of hot coffee are by far the greatest.

While recognizing the great advantage of having only a few staple drinks in stock and keeping these of high quality, I nevertheless believe it wise to have a choice of flavors to offer customers.

Thus, in addition to the four drinks above mentioned, there is some demand for hot lemonade, hot tea, ginger, and the various milk and egg drinks.

Chicken broth has not the place which it deserves among hot soda flavors, for it should, in my opinion, be the most popular soda water flavor, and where a good article is furnished and is well pushed, I think the hot soda sales can be greatly increased.

HOT COFFEE.

Hot coffee being the most popular flavor must be treated of first. It is evident that ordinary coffee would be too weak for use in hot soda water, since the addition of the hot water from the draft arm would dilute it considerably. A strong extract of coffee is therefore required, and is usually obtained by passing steam through a percolator packed with ground coffee beans. The steam extracts all the strength and aroma

of the coffee, and then slowly condenses, forming a very strong coffee extract. Those who do only a small business will, of course, find it advantageous to buy their extract ready made, rather than make it themselves.

Some dispensers use only Java coffee for their hot soda, making their extract from what is technically known as the "male berry," but I confess that for my part I prefer a mixture of Java and Mocha. It is almost unnecessary to say that the coffee should be purchased in the bean and should be ground only at the very last moment. One pound of coffee beans will make sufficient extract to flavor about a gallon of simple syrup, since, as before remarked, hot coffee is not drawn so sweet as the coffee served up with cold soda. The extract may be either added to the simple syrup and so dispensed from the syrup tank of the apparatus, which is a great convenience for the soda-fountain boy; but the best dispensers prefer to keep the simple syrup and the coffee extract separate, not only because the two keep better that way, but because it is easier to regulate the sweetness of the drink to suit the taste of individual customers.

### HOT CHOCOLATE.

This, as before mentioned, is the ladies' favorite Winter tipple. A very good formula for chocolate syrup for hot soda is to take one pound of essence of cocoa to one gallon of vanilla syrup of 25° strength by the saccharometer. The powdered cocoa should be stirred in until thoroughly incorporated, while the syrup is quite hot. The syrup as thus prepared will keep for several days in a cool place. Like all soda water flavors, however, it is well to make it up in small quantities so as to have it always perfectly fresh, hence small dispensers must reduce the quantities given, say, one-half or three quarters.

Some authorities recommend the addition of a little cornstarch or gelatin to the chocolate syrup to give it "body," but these additions will only spoil an otherwise palatable drink.

An essential point to bear in mind is that the chocolate used, or more properly speaking the cocoa, must be deprived of its butter, and this operation must be performed by what is known as the "cold process." Such cocoas as those furnished by Menier, Van Houten, Maillard, and almost all the Dutch firms, will answer the purpose admirably, these manufacturers all using the cold process. In ordinary cake chocolate the cocoa butter is left, but in chocolate for making soda water syrups it must be removed or the butter would separate and the chocolate become lumpy, and its keeping qualities would also be impaired. On the other hand, if the cocoa butter be removed by the hot process, the chocolate loses its flavor.

When serving up hot chocolate at the dispensing counter, the addition of a little whipped cream will greatly improve the taste and appearance of the drink. The whipped cream can be made by whipping together the whites of three eggs and one-half pound of powdered sugar to a stiff froth. The cream when whipped should be kept in a cool place, and a teaspoonful be added to each tumblerful of hot chocolate before serving.

### BOUILLON.

Under this heading may be classed the various meat preparations, including not only beef broth and beef tea (so-called), but also the various meat juices, whether served up raw or cooked. There is a great demand for these drinks from November to February, and when properly made they are not only comforting at the moment but are most nutritious and palatable. Liebig's beef extract is the one generally preferred for hot soda water purposes, as its keeping qualities seem somewhat better than those of most other brands. The extract need be merely dissolved in hot water, the proportions required being about four ounces of beef extract for a gallon of beef tea.

A very fine addition to beef tea, and indeed to all other beef preparations, is a small amount of Lea & Perrins' sauce. This gives a relish that is thoroughly appreciated by the customer. A little extract of celery or celery salt should also be added. The combination of these three ingredients makes a delicious beverage.

Beef juice is one of the beef preparations which on general principles can be highly recommended. Physicians are yearly growing to understand better the value of warm blood as a nourishing agent, and prescribe it continually for building up weak systems. Most patients, however, especially among the women, shrink from making a daily pilgrimage to the slaughter-houses for a glass of warm blood, and for these (and indeed for all weak persons) the freshly expressed beef juice is to be highly commended as being the next best thing to the warm blood. It is moreover exceedingly palatable when served up in the form of hot soda.

The beef juices on the market have usually undergone some little preparation or addition before they reach the druggist, and are generally known under some fancy name. Probably the best known of these beef juices is that which goes under the name of "Boviline." It is put up in barrels in Chicago, a small quantity of yolk of eggs and whisky being added to the fresh beef juice, and the mixture is then sent out to all parts of the country. The whisky is used merely as a preservative, and I must confess I hardly see what advantages it has over pure alcohol. The amount of whisky added is, however, so small, that it does not bring the preparation under the excise laws, which is an important point for druggists in many parts of the country, especially in those cities where the law prohibits druggists from selling any intoxicating liquors that are to be consumed on the premises.

### HOT LEMONADE.

For making hot lemonade the freshly expressed lemon juice is greatly to be preferred to the extract of lemon, as it makes a much more satisfactory beverage in every respect. The only trouble is that the lemon juice does not keep well, and hence must be made up in small quantities and used at once. At Hudnut's pharmacy it is the practice to make fresh lemon juice three times each day in order to have it always fresh. Where the demand for it is small, the lemon can be squeezed into each tumblerful of soda served. The lemon juice may, of course, be either added to the simple syrup or may be dispensed separately, but in either case the following proportions are to be recommended, about ten ounces of lemon juice to each quart of simple syrup of 22° strength. Of course in all these formulas the proportions are only approximate, and must be altered to suit popular taste in the locality where the druggist happens to be established. People's tastes differ widely, and it requires some experimenting to fix upon a happy mean. It is needless to say that lemon syrup, nor in fact no other acid syrup, goes well with cream.

When egg drinks are sold, the egg is first broken into the mug and whisked around with any convenient egg beater, and the syrup and water are then drawn upon it.

In conclusion I cannot insist too strongly upon the importance of using only fresh flavors. Every flavor used should be made up fresh every morning, and lemon-juice should be prepared at least twice a day, if not oftener.

# Pharmaceutical Progress

**Eau Tremolieres and Ristoratore di Capelli** are two lead hair dyes.—*Pharm. Centralhalle.*

**Creme Lefebre** is a freckle lotion which (*Pharm. Central.*) is a yellow wax salve containing corrosive sublimate.

**Thompson's Pate des Gnomes,** a stimulant for the beard, consists of a rose-colored perfumed glycerin salve.—*Pharm. Centralhalle.*

**Thompson's Eau des Circassiennes** consists of 30 grammes of zinc oxide rubbed up with 200 grammes of perfumed water.—*Pharm. Centralhalle.*

**Piperine is not tasteless,** though we have been taught that it is, says Th. Wiegle (*Pharm. Zeit.*, 1893, 584), as can best be demonstrated by tasting a hot solution of it

**Syrup of tolu** which has altered in color and taste from standing may be at least partially restored by boiling briskly for a few moments. According to M. Ausaldy (*L'Univ. Pharm*) the addition of 0.05 centigrammes of benzoic acid to each liter of the freshly made syrup has preserved a sample unaltered for more than a year.

**Plane-tree Honey.**—E. Jandrier describes a sweetish exudation found during dry Summers on plane trees (*Platanus orientalis*). It varies considerably in appearance, being sometimes dry and brilliant, at others pasty and yellowish. Besides a small quantity of a reducing sugar, apparently glucose, it contains from 80 to 90 per cent. of mannite, which may be readily extracted by crystallization from boiling alcohol (*Comp. rend.*, cxvii., 498).—Through *Pharm. Jour.*

**Iridin, a glucoside from orris root,** has been isolated and investigated by G. DeLaire and Ferd, Tiemann. The glucoside has the formula $C_{34}H_{36}O_{19}$ and its melting point is 208°C. (*Ber. d. D. Chem. Gesell, 26, 2,010*). At 80 to 100°C. the glucoside is split up by diluted sulphuric acid yielding glucose and "irigenin" (melting point 186°C.), thus $C_{34}H_{36}O_{19}+H_2O=C_6H_{12}O_6+C_{16}H_8O_6$. They further obtained from irigenin an aromatic oxyacid which they term "iridinic" acid; a phenol, "iretol."

**Simplified test for arseniates** is proposed by John Lothian (*Pharm. Jour*) which is especially applicable to insoluble arseniates in which the B. P. test (boiling with excess of caustic alkali, neutralizing and testing with $AgNO_3$) is tedious and unreliable. Lothian proposes to dissolve the substance in dilute HCl, or, if insoluble, acidulate with that acid, add $Na_2S_2O_3$ warm and pass $H_2S$ gas, when yellow arsenious sulphide will be at once thrown out. The sulphur precipitated from the sodium salt does not interfere, but if desired it may be removed by agitation with carbon bisulphide.

**Home-made Celluloid.**—The following formula makes a substance as transparent as pure glass, at the same time very pliable and strong. Dissolve four to eight parts of gun cotton in a mixture of alcohol and ether, in proportion of 1 of gun cotton to 100 of the combined liquid, after which add 2 to 10 per cent. of castor oil, or any other oil unsiccative, and 4 to 10 per cent. of Canada balsam. Flow this mixture on to a glass plate, and dry in a current of air at 50°. The result is a leaf of hard substance as transparent as glass, and very nearly unbreakable, resisting perfectly the action of all salts, acids and alkalies.

**Cocaine Reaction**—To 0.02 gm. cocaine hydrochlorate dissolved in one drop of water is added 1 Cc. concentrated sulphuric acid; the colorless solution upon addition of a drop of potassium chromate or bichromate solution gives a precipitate which rapidly redissolves; upon moderate heating the yellowish red color changes to green, while stronger heating causes the escape of benzoic acid vapors. Other reducing alkaloids like morphine are distinguishable by other tests as, for example, the action of sodium hydrate which dissolves morphine but not cocaine—Dr. Schaerges, *Schwz. Wochenschr. f. Chem. und Pharm.*

**Solution for making syrup of iodide of iron** is made by Roussillon, according to the following formula, which he claims yields an unalterable product: A boiling solution, composed of resublimed iodine, 16.40 gm., iron filings 8 gm., and distilled water 30 gm., is filtered into a flask containing 220 gm. pure neutral glycerin, the filter washed with boiling distilled water; the liquids are well mixed and subjected to a moderate heat, until they measure 240 gm. The solution is then filled into well dried bottles, which are closed, and upon cooling the stoppers are covered with paraffin.—*Jour. de Pharm. et de Chim.*, September, 1893, p. 243. Through *Am. Jour. Pharm.*

**Thioform.**—The bismuth salt of a dithrosalicylic acid, according to the *Medical Press*, is almost insoluble in water and is suitable for surgical dressings like iodoform, to which, however, it is said to be superior. It has none of the disadvantages of iodoform or its surrogates, bismuth, salicylic acid, boric acid and the like. It has sufficient disinfecting power to permit wounds to heal under it antiseptically. It is almost non-irritant, it can be blown into the conjunctival sac, and possesses drying properties. It has no smell, is a deodorant, and relieves pain, so that Prof. Hoffmann, who has investigated it, can thoroughly recommended it. It is manufactured by Speyer and Grund, Frankfort, A/M.

**A delicate and simple test** by means of which as little as 0.05 milligrammes of lead in one liter of water can be detected, has been devised by Dr. M. T. Lecco of the Royal Servian State Laboratory in Belgrade. In this process it is unnecessary to wait until the fine precipitate caused by the introduction of sulphureted hydrogen settles. He gives the following directions: Acidify one liter of the water with acetic acid, evaporate to 100 Cc., filter, and add one drop of diluted solution of hydrogen sulphide (1 part of saturated solution to 2 parts distilled water). If the merest trace of lead be present the water will become dark though remaining clear. For colorimetric estimation of the lead proceed as above and at the same time proceed in the same way with a specimen of the same water that is known to be free from lead and use them as a comparative standard. To this standard then add a solution containing 0.1 milligrammes of lead in each cc. until both solutions have the same intensity of color. A simple calculation based on the amount of the lead solution required to produce a color of the same intensity as that of the water under examination will then show the quantity of lead present. By using the same water for both tests (the control water not having been exposed to lead contamination) the possible error due to the presence of iron is eliminated.

**The spontaneous ignition of lupulin** is reported from Bremen. On one of the transatlantic steamers just about ready to sail smoke was seen to issue from a box; upon opening, to see the cause, the material, lupulin, burst into flame. The lupulin had been sent from some part of Bavaria and was to be shipped to this country. The unconsumed portion was found to be thoroughly caked, due to the presence of moisture, and thus furnishes the cause of the ignition: a material, rich in oil; moisture; large quantity and considerable time of storage by which the heat generated by the slow oxidation of the oil, was so much increased that it reached the ignition temperature.—*Südd. Apotheker Ztg.*, 1893, 466.

**Preparation of Hydrogen.**—J. Ball, of the Royal College of Science, notes that he has recently observed that, by the addition of a few drops of cobalt nitrate solution to the acid and zinc in a hydrogen apparatus, the rate of evolution of the gas is enormously accelerated, especially at the beginning of the reaction. The cobalt nitrate appears to be almost unaltered. A very thin film of cobalt was deposited on the zinc, but the amount deposited was much too small to weigh. A similar action is exerted by a solution of a nickel salt. Another correspondent confirms the statement made by Ball, remarking that he has been accustomed to make use of this property of the cobalt salt for some time past (*Chem. News*, lxviii., 184).

**To Detect Artificial Coloring-matter in Butter.**—Shake a small quantity of the butter in alcohol, set aside for two or three minutes, then decant the alcohol and evaporate it over a spirit lamp. There should be no non volatilizable residue. In case the butter is colored with annatto, a brownish-red sediment forms at the bottom of the dish, which is changed to a blue color by the addition of sulphuric acid. If colored with curcumin, a deep rose colored residue will remain which turns brown when treated with hydrochloric acid and an intense brown when treated with carbonate of potassium or of sodium. Saffron produces a sediment which becomes red when treated with lead subacetate, and carrots produce one that turns green with alkali.

**Uropherine** (Lithio-diuretin).—This is a new theobromine combination introduced recently by E. Merck, Darmstadt. It is said to be much more easily absorbed than the ordinary diuretin, and the therapeutical effects are obtained with smaller doses (3–4 gr.). Lithio-diuretin is probably a combination of theobrominlithium with salicylic acid; at all events, it is recommended in the case of patients who evince an idiosyncrasy for salicylic acid, that a combination of benzoic should be exhibited. To provide for this the manufacturers have introduced theobrominlithium, lithium benzoicum, which, it is stated, affords very good results. To facilitate the prescription of theobromlithium—lithium salicylicum, Merck has given it the name "Uropherine," under which name it will find place in his price list.

**Tetra-ethyl Ammonium** is described by Dr. Fred. Peterson (*New York Medical Journal*, No. 772, p. 320) as one of the best solvents of uric acid. He says it may be obtained by decomposing its iodide by moist argentic nitrate or its sulphate by baryta. Tetra-ethyl ammonium occurs in deliquescent hair-like needles, and absorbs carbon dioxide from the air. It is strongly alkaline and saponifies fats. It is as bitter as quinine. It has a caustic action upon the epidermis, and an unctuous, alkaline feel when rubbed between the fingers. Its formula is $NEt_4OH$. It is not decomposed by the galvanic current. It forms numerous salts (sulphate, nitrate, phosphate, carbonate, hydrochlorate, hydrobromate, iodide, bromide), as well as beautiful double salts with gold, platinum and mercury.

**Coccus Cacti.**—Dr. Paul Meyer has made some observations on living cochineal insects at the Naples Zoölogical Station. The embryos develop completely within the mother, but are born within egg shells. The red pigment is not found within any organ apart from the diffuse fatty body and the yolk. It does not occur in skin, gut, salivary glands, excretory tubules, or blood, and nothing is yet known regarding its use to the insect. Carminic acid is said to be a product of metabolism. The coccerin secreted by the wax glands, which are particularly abundant near the anus, serves to inclose the excreta and so prevent the body of the insect being soiled. It passes out in long threads by the "wax-hairs" and in short curved ones by the "wax-pores" (*Journ. R. M. S.*, 94, 324).—Through *Pharm. Jour.*

**The comparative action of iodoform** on staphylococcus and on the elements entering into the composition of blood has been investigated by Dr. E. Maurel (*Bull. Gén de Thèrap.*), who finds that the leucocytes of human blood absorb, at body temperature, the staphylococci of a gelose culture, but succumb to that absorption within two hours; the blood corpuscles separate, but dissolve and disappear after fifteen hours; and fibrin, which is at first precipitated, is redissolved after twenty-four hours. Iodoform in doses varying from 10 cgm. to 2.50 gm. per liter of blood has no toxic action on the leucocytes; on the contrary, their activity seems to increase proportionately to the dose employed. The author finds that iodoform has no apparent action on the reproductivity of staphylococcus but lessens its *virulence* against leucocytes when blood is submitted to its presence at the same time. From these results the author draws the conclusions, that three distinct properties must be recognized in various microbes, but especially in staphylococcus, *virulence*, *reproductivity* and *survivancy*, and that the efficiency of iodoform against staphylococcus, which has been demonstrated by clinical practice, is due to its double action in increasing the activity of the leucocytes, and in diminishing the virulence of the staphylococcus.

**Preservation of Cultures by Formalin.**—Hauser (*Münch. med. Woch.*) refers to his former experiments in which it was shown that cultures could be preserved by means of formalin vapor. Gegner proved that gelatin exposed for a long time to formalin vapor does not become fluid at the body heat. The author further shows that at no temperature can it be liquefied. At the same time the gelatin is in this way permanently sterilized and remains unchanged. Thus formalin is a most useful means of preserving cultures, the only condition being that they should not be allowed to dry up. It is also specially adapted for microscope culture preparations. After thus fixing the gelatin in not too thick a layer, the part which it is desired to keep should be detached with a sharp spatula. This is put on a slide with gelatin of similar composition, and a cover-glass applied. The preparation is then put into the formalin vapor chamber for twenty-four hours. Lac is applied round the cover-glass to prevent drying. Cultures can also be made on slides in the first instance. The author has tried these methods with success in the case of many micro-organisms. The culture can also be stained by a weak watery fuchsin solution. Another method is to let the colored gelatin culture dry upon the slide and then mount in Canada balsam. The colony should in all cases lie in the center of the gelatin.

**Precipitation and Boiling Points.**—R. Engel has previously shown that to precipitate one molecule of a chloride from a saturated solution at 0°, one molecule of hydrochloric acid must be added in the case of monovalent chlorides and two molecules in the case of bivalent chlorides, the law of definite proportions thus holding good even in solutions. He now shows that the same rule prevails at temperatures other than 0°, and with double chlorides. The double chloride of copper and ammonium, of which the molecule contains four atoms of chlorine, requires four molecules of hydrochloric acid for the precipitation of one molecule. It is further pointed out that, at the freezing point, in the case of saturated solutions of alkaline chlorides, bromides, and iodides, a relation exists between the solubility of the compound and the atomic weights of the elements constituting the molecule (*Comp. rend.*, cxvii., 485).—Through *Pharm. Journ.*

**Potassium Permanganate as an Antidote.**—Schlagdenhauffen and Reeb refer to the fact that J. Antal has found permanganate of potassium act as an antidote to phosphorus, muscarine, strychnine, colchicine, oil of savin, and oxalic acid, when administered to frogs, rabbits, and dogs, with or directly after the poisons, and then proceed to describe the result of experiments conducted by themselves to ascertain the effect of the permanganate upon coronillin, $C_{11}H_{12}O_4$, a poisonous bitter principle isolated by them some years ago from the leaves of *Coronilla Scorpioides*. They find that when the salt is placed in direct contact with the glucoside the latter is decomposed, being entirely oxidized, and physiological tests, in which frogs, pigeons, and guinea-pigs were used, seemed to prove that the permanganate is a true antidote to the poison when administered within a sufficiently brief time after the latter (*Journ. der Pharm. von Elsass Loth.*, xx., 322).—Through *Pharm. Journ.*

**The Detection of Cotton Oil in Lard.**—The following is a method for detecting *heated* cotton oil in lard:

Place about ten grains of the sample to be examined in a cup-shaped porcelain capsule of about half an ounce capacity. A small disk of white filter paper (which has been soaked in hydrochloric acid, thoroughly washed with distilled water, and dried) is *just moistened* with a 12 per cent. solution of nitrate of silver, and placed in the concave part of a watch-glass, which, with the paper downward, is then inverted over the capsule containing the sample. The capsule is then put in a shallow oil-bath, to which heat is gently applied, until a thermometer in the bath reaches 240° F. The source of heat is then *immediately withdrawn*. I find that if even less than 1 per cent. of heated cotton oil be present in the sample, a very marked coloration takes place on the disk, varying from a light brown to nearly black. If the sample under examination be pure and fresh, the disk is apparently unaffected.—William Gustavus Crook in *The Analyst.*

**Ferric Chloride for Sterilizing Water.**—F. Watts describes a simple method of sterilizing water for domestic purposes, which has been extensively employed, with apparently good results, in the Leeward Islands. It consists in adding to hard water sufficient neutral ferric chloride solution to produce a perceptible precipitate. In the case of soft water, a small quantity of lime water or dilute sodium carbonate solution is added after the ferric chloride solution, and so causes a precipitate to form. In either case vigorous stirring promotes the granulation and subsidence of the precipitate, and, after this has subsided, the clear water is drawn off for use. With small quantities of water it may be found advantageous to subsequently pass the water through a simple form of filter, such as a felt bag, or clean sand in a shallow box or a flower-pot, but this is unnecessary with large quantities. One to one and a half fluid ounce of B. P. liquor ferri perchlor. fort. is stated to be sufficient to purify one hundred gallons of water. By treating sufficient for a day's supply at night, the pure water will be ready for use in the morning (*Chem. News*, lxviii., 178).

**Basic organic bismuth salts** can be made by taking advantage of the solubility of bismuth chloride in a 25 per cent. solution of sodium chloride or other alkaline chloride and adding the organic acid to this solution. *Basic bismuth gallate:* 100 gm. bismuth chloride are dissolved in 1,800 gm. sodium chloride solution (25 per cent.), filtered, 400 gm. gallic acid added, boiled for 20 minutes, replacing the evaporated water, and pouring into an excess of water sufficient to retain in solution the excess of gallic acid; the precipitate is washed and dried; the product contains 49.2–50 per cent. bismuth and corresponds to the formula $C_6H_2(OH)_3COOBi(OH)_2$. *Basic bismuth pyrogallate:* 150 gm. pyrogallol are dissolved in 650 gm. and 316 gm. bismuth chloride are dissolved in 1,000 gm. solution of sodium chloride (25 per cent.); the filtered solutions are mixed, heated for one-half hour in a water-bath and poured into such a volume of water (about 20 volumes) that precipitation of the basic salt commences; after some time the precipitate is collected, washed with water until the acidified washings cease to react with silver nitrate; the product, apparently, has the formula $C_6H_2(OH)O_3(BiOH)$.—Dr. A. Voswinkel, *Pharm. Ztg.*, 1893, 594. Through *Am. Jour. Pharm.*

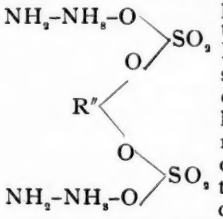
**The Bacteriology of Aerated Waters.**—With cholera in the land, many people are naturally anxious about what they should drink, so that we consider it timely that Dr. Charles Slater, lecturer on bacteriology at St. George's Hospital, should have published a paper embodying the results of a bacteriological examination of aërated waters, says the *Chemist and Druggist.* The points which Dr. Slater investigated (to a large extent, we understand, in the Idris laboratories) were (1) the source of the water and the methods employed in its purification; (2) the number and the nature of the micro-organisms present in mineral waters derived from various sources; (3) the action of $CO_2$ on the microbes present in aërated waters; and (4) its action under various pressures on certain pathogenic organisms. Under the second head we notice some startling figures, the number of organisms in 1 c.c. of the waters twenty-four hours after aëration varying from 354 to 2,919. In the course of three weeks the organisms almost entirely disappeared. An important fact is that simple aëration kills off the greater number of the organisms. Thus, a water which contained 2,172 per c.c. before aëration, showed only 433 after. This was further proved on studying the third problem. Experimenting with pathogenic organisms, including the microbes of typhus and cholera, it was found that they were killed in from a week to a fortnight, although at the end of two months they were still alive in plain distilled water. It is the $CO_2$ which kills the organisms. Dr. Slater also remarks that "bottled aërated water prepared from a main-water passed through a Berkefeld filter showed the presence of a comparatively small number of micro-organisms." He concludes that "an aërated water made from a good source, and kept for more than fourteen days, appears to offer complete safety from the usual water carried diseases." There is much else in the paper which should interest aërated-water makers who can appreciate the importance of bacteriological research.

**The rapid detection of tin,** in salt solutions, even in presence of iron, copper, or other reducing substance, is effected by G. Dénigès (*Bull. Soc. Pharm. de Bordeaux*) by means of a molybdo-sulphuric solution (molybdate of ammonium, 10 gm.; distilled water, 100 Cc.; pure sulphuric acid, 100 Cc.). Several drops of the suspected solution are placed on a platinum dish with one drop of sulphuric acid, and a piece of zinc is placed on the platinum in contact with the liquid; after one or two minutes the zinc is removed, the dish washed under a thin stream of water, allowed to drain, and if a metallic stain is found on the platinum, at the place of contact with the zinc, it is wetted with 4 or 5 drops of hydrochloric acid, and evaporated to complete dryness. Several drops of water are now placed on the dry residue for several minutes, and one or two drops of the liquid so obtained are added to 2 or 3 Cc. of the molybdo-sulphuric solution, when an instantaneous blue coloration will show that tin is present in the solution examined.

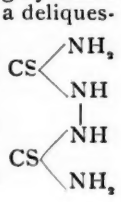
**Choparro Amargosa.**—Mixon (*Texas Sanitar.;* II, No. 10) describes Choparro Amargosa as a small, thorny bush that grows in Southwest Texas, belonging to the natural order Simarubacéæ (which also includes quassia and simaruba). The bark, leaves, thorns, flowers, and fruit, all have an intensely bitter and characteristic taste. The tendrils contain the active principle in greatest proportion, and are generally selected for pharmaceutic purposes. The plant yields its virtues to boiling water, in the proportion of from 2 to 4 ounces to the gallon [1–2:64]. The dose of the fluid extract, as a tonic, is from 10 minims, to ½ fluid ounce [0.6–15 Cc.]; as a stimulant, from three fluid drachms to one fluid ounce [11–30 Cc.]. Large doses cause flushing of the face, and fulness of the head. The odor of the drug can be detected in the urine, although no appreciable effect upon the renal secretion has been observed. All parts of the bush are said to possess medicinal virtue, except old stock. The drug is credited with some antiperiodic properties, which might make it a desirable remedy in the treatment of malarial dysentery. The active principle, upon which the properties of the drug are supposed to depend, has not yet been isolated.

**Active Principles of Dorstenia Contrayerba.**—Dorstenia contrayerba, a Brazilian plant, of the family of the Ulmaceæ, was first analyzed some years ago by Peckolt, who named its chief active ingredients *dorstenin* and *dorstenic acid.* It has recently been investigated by Mussi (*Rif. Med.*), who published the following results: (1) The aqueous infusion is acid and strongly reduces Fehling's solution; it foams strongly on being shaken, becomes turbid on the addition of alcohol, and clear again on the addition of nitric acid. The plant yields about 3 per cent. of ash. (2) An alcoholic extract of the root yields, by suitable treatment, two substances called provisionally *cajapine* and *contrayerbine.* The first is a dark yellowish-red amorphous substance, soluble in water, alcohol and ether. It leaves no residue on ignition; its vapors have an acid reaction; its solution does not reduce Fehling's solution; the addition of an alkali produces a yellow-blue fluorescence. It gives precipitates with lead acetate, silver nitrate, ferric chloride, gold or platinum chloride, bromine water, tannic and phosphomolybdic acids. It is unaffected by picric acid, and apparently unaltered by the mineral acids. Contrayerbine is white and amorphous, burns without residue, is soluble in alcohol and ether, but not in water. By treatment with tartaric acid, in alcoholic solutions, it forms a tartrate which is soluble in water. Its solutions give precipitates with gold or platinum chlorides, with Bouchardat's reagent, bromine water, picric acid, or phosphomolybdic acid; but it yields no precipitate with tannic acid. The physiological action of the new substances is being studied by Coronedi.

**Hydrazin.**—F. Schrader shows that the hydrate of this compound, $N_2H_4 \cdot H_2O$ (*Pharm. Journ.* [3], xix., 702), decomposes sooner or later, even when inclosed in sealed tubes, ammonium hydrate being the chief product formed. He also describes a series of double sulphates with the general formula $R''SO_4 \cdot (N_2H_4)_2 \cdot H_2SO_4$, where R″ may represent copper, nickel, cobalt, iron manganese, zinc, or cadmium. They contain no water of crystallization, dissolve with difficulty, and may be prepared by simply mixing solutions of the constituent sulphates. The accompanying formula



probably represents the constitution of the double salts. Double chlorides of fixed composition were only prepared with difficulty A new compound of hydrazin was prepared by saturating the hydrate with sulphocyanic acid or by decomposing the sulphate with barium sulphocyanide. The resulting hydrazin sulphocyanide, $N_2H_4 \cdot HSCN$, is described as a deliquescent substance, melting at 80°. On heating it for four or five hours in a sealed tube at 100°, another new compound, of urea-like constitution, was formed, hydrazin sulphocarbonide. This is described as crystallizing from a hot aqueous solution, melting at 214°–215°, and possessing acid properties (*Chem. Zeit.*, xvii., Sept).



## Peruvian Balsam.

This article is the product of the *Myrospermum salvatoriensis* or *Hoitziloxitl,* which grows almost exclusively on the "Costa del Balsamo," or "balsam coast," of Salvador, comprised by the southern shores of the department of Sonsonate and La Libertad.

The balsam is a beautiful tree averaging one hundred feet in height and 20 inches in diameter. There are two ways to extract the liquid, erroneously styled Peruvian balsam. The first consists in scraping the skin of the bark to the depth of one-tenth of an inch with a sharp machete in small spaces some 12 to 15 inches square all along the trunk and stout branches of the tree. Immediately after this operation the portions scraped are heated with burning torches made out of the dry branches of a tree called "chimaliote," and after this pieces of old cotton cloth are spread on the warmed and half-charred bark. By punching the edges of the cloths against the tree with the point of the machete they are made to adhere. In this condition they are left for 24 and even 48 hours (in January), when the rags are gathered and submitted to a decoction in big iron pots. After this the rags are subjected, while still hot, to great pressure in an Indian machine made of strong ropes and wooden levers worked by hand. The balsam oozes out and falls into a receptacle, where it is allowed to cool. This is called raw balsam. To refine it, they boil it again and drain it, after which they pack it in iron cans ready for market.

The other method of extracting balsam consists in entirely barking the trunk and heavy branches of the tree, a process which, as a rule, kills it outright and at best renders it useless for several years. The bark is

finely ground, boiled and submitted to pressure in order to extract the oil, which is considered of an inferior quality to that obtained by the system first described. Both methods are defective, but the latter is ruinous and forbidden by the authorities.

The name of Peruvian balsam was given to this article because it was first sent from San Salvador to Peru in the time of the Spaniards and from Callao reshipped to Europe.—*U. S. Consular Report.*

## Macassar Oil.*

By Robert Glenk.

The true macassar oil, prepared from the seeds of *Schleichera Trijuga*, Willd., one of the East Indian Sapindaceæ has a great reputation in its native country as a stimulating application to promote the growth of the hair and also as a remedy in skin diseases, especially eczema.

It is obtained either by expression or by boiling the bruised seeds in water and skimming off the oil which rises to the surface.

It has in former years been imported into this country ; latterly, however, a product under the name of macassar oil but which in reality was mainly composed of cocoanut oil in which the blossoms of Ylang Ylang, *Cananga odorata*, or of the false Ylang Ylang, *Michelia champaca*, N. O. Magnoliaceæ, have been digested began to make its appearance on the market and took the place of the former. Now, mostly domestic oils under the same name, suitably perfumed and frequently colored red with alkanet, have entirely replaced the natural product.

The writer recently received a small sample of the true macassar oil from Mirzapoor, Hindoostan. At the ordinary temperature it is semi-solid, of a yellowish white appearance and has a weak odor of bitter almonds. It is said to contain hydrocyanic acid and it is not unlikely that in the stimulating properties of this constituent the cause of the ascribed beneficial action of the oil may reside.

It has a mildly acrid taste, probably due to partial rancidity, and an acid reaction to litmus paper. It is completely liquefied at 82° F. (28° C.) and congeals near 50° F. (10° C.). The oil is readily saponified by sodium hydrate, even at a low temperature, the soap being white and hard. With nitrous acid it assumes an orange red color and becomes viscid, but does not seem to solidify. On adding 5 drops of the oil to 20 drops of concentrated sulphuric acid it acquires a reddish brown color. The oil is freely soluble in chloroform, ether, bisulphide of carbon, benzol, benzine and the fixed and volatile oils, but only slightly soluble in alcohol. It has a specific gravity of 0.942.

An excellent formula for preparing a so called macassar oil for the hair, and which has given great satisfaction to those who have used it, is the following :

| | |
|---|---|
| Castor oil | 16 f oz. |
| Alcohol | 3 f oz. |
| Oil of nutmeg | 30 min. |
| Oil of rosemary | 10 min. |
| Oil of sweet marjoram | 10 min. |
| Oil of neroli | 10 min. |
| Oil of rose | 20 min. |
| Tincture of musk | 1 f ʒ |
| Alkanet | sufficient to color |

Macassar Pomade, made by the following formula, also makes an excellent preparation :

| | |
|---|---|
| Castor oil | 10 oz weight |
| Suet | 2 oz. |
| Spermaceti | 1 oz. |
| Oil of nutmegs | ½ f ʒ |
| Oil of sweet marjoram | ½ f ʒ |
| Oil of rosemary | ½ f ʒ |
| Oil of rose | 15 min. |
| Oil of rose geranium | 10 min. |
| Alkanet root | sufficient to color |

Melt the spermaceti and suet adding the castor oil previously colored by digesting with alkanet, and lastly add when nearly cold the perfumes, which in this case are also the medicaments.

*American Journal of Pharmacy.*

## The Examination of Potable Waters.*

By E. J. Parry, B.Sc.

Water analysis naturally divided itself into several heads. The author would, however, confine himself more especially to potable waters. The examination of these falls under four principal heads : I. Physical examination. II. Estimation of inorganic constituents. III. Organic analysis (most important). IV. Biological examination.

**I.—Physical examination.**—Great care must be exercised in obtaining a sample of the water. The best vessel for collection is a clean stoppered 5 gallon bottle, rinsed out first with a little of the water to be tested before filling. If the water be drawn from a tap, allow it to run for two minutes before collection ; if from a river, collect in mid-stream and open the bottle under water. Should the sample collected with these precautions be distinctly turbid and possess a disagreeable odor and taste, it will be condemned on these grounds alone. Otherwise it is advisable always to note the color of a water carefully. Loviband's tintometer does this best. This consists of two tubes, into one of which distilled water is poured, into the other the sample. A set of tinted glasses enables one to get the same tint from the distilled water as from the water examined. The color obtained is then interpreted by the table.

**II.—Inorganic analysis.**—Except in the case of a very polluted water, qualitative analysis is no use. The direct addition of Nessler's reagent, testing for nitrites and metals, and estimating roughly the action with acidified solution of potassium permanganate, are all that need be done. If the water is not hopelessly bad, a quantitative examination must be made as follows :

*Determinations.*—The chief are : 1. Organic and inorganic solid residue. 2. Chlorine. 3. Phosphoric acid. 4. Sulphates. 5. Nitrous acid. 6. Nitric acid. 7. Hardness. 8. Poisonous metals. Results would be expressed in this paper by grains per gallon, the most unscientific method but the one best understood by the public.

1. Total residue.—Evaporate 70 Ccs. in a platinum dish on a water bath, then heat to 110° in an air bath. The weight, in milligrammes, of the residue gives the number of grains per gallon, since as a milligramme : 70 Ccs. so is 1 grain : 1 gallon. The dish should be cooled in a desiccator before weighing, not in the open air, as Wanklyn says. Next the dish should be ignited and the result noticed. If the water is pure no blackening should occur.

2. Chlorine.—Concentrate 210 Ccs. to 30 Ccs., and titrate with a fairly weak solution of silver nitrate (equivalent to 2 milligrammes Cl. per Cc.)

3. Phosphoric acid.—This exists in very small quantities in drinking water. A rough approximation, therefore, only is necessary or practicable. Treat the solid residue with a few drops of nitric acid, dry to render any silica quite insoluble, re dissolve in a few drops more of the acid and 2 or 3 Ccs. of water. Filter, warm gently with a few drops of acid solution of ammonium molybdate. Yellow coloration is given with traces of phosphoric acid, and distinct ppt. even

* Read at a meeting of the Chemists' Assistants' Association, of London, Eng.

with minute quantities. The color may be imitated by a standard solution of sodium phosphate if estimation be required.

4. Sulphates.—Concentrate a portion, acidify with hydrochloric acid and ppt. with barium chloride.

5 and 6. Nitrates and nitrites.—The estimation of these is very important. There are several methods for doing this.

(*a*) Reduction method.—Thorpe recommends this method. Make a copper-zinc couple by immersing a zinc-foil in a weak solution of copper sulphate until covered with a black spongy coating. Wash the strip well, and distill off 70 Ccs. of the sample from this couple. The ammonia formed from the reduction of the nitric acid is estimated in the usual way. The following modification answers better: The water is left on the couple for 24 hours at the ordinary temperature, the couple being then removed. Complete reduction of the acids is then insured without so much risk of breaking up any organic nitrogenous matter by boiling with a strong reducing agent. This method is a good one. Each molecule of ammonia is equivalent to one of either nitrous or nitric acid; the former must be got at and deducted.

Nitrous acid.—Metaphenylenediamine in acid solution is best for this. The yellow brown color obtained is compared with that from a standard solution of potassium nitrite, just as ammonia is estimated by Nessler's reagent. The brown color is caused by the formation of Bismarck brown—thus:

$2C_6H_4(NH_2 + NOOH = C_6H_4(NH_2)N_2(C_6H_3)(NH_2) + 2H_2O$.

(*b*) Indigo process.—This is not satisfactory. It depends on the oxidization and decolorization by the acid, and very variable results are obtained, unless the experiments do not differ at all in their conditions. A little organic matter also interferes to a large extent.

(*c*) Potassium iodide and starch test is rather popular, and consists of imitating by standard solutions the colors obtained by the action on starch of the iodine liberated from potassium iodide by the nitrous acid. Nessler glasses are also used for this. One of nitrous acid is by this indicated in ten millions in a few minutes or one in a thousand millions in 48 hours.

(*d*) Griess's test is so delicate that it can hardly be used quantitatively. It quickly indicates one in a thousand millions, and is performed thus: To 10 Ccs. of the sample add first one drop of dilute hydrochloric acid, then one drop of strong solution of sulphanilic acid, lastly one drop of saturated solution of naphthylamine hydrochloride. The color is pink or red, according to strength, and is imitated by standard solutions.

7. Hardness.—Dr. Clark's soap test.—A standard solution of soap is prepared of such strength that 1 milligramme of carbonate of lime, held in solution by carbonic acid, is precipitated by 1 Cc. of it. The soap solution is gradually added to 70 Ccs. of the sample, with frequent agitation, and the point at which a permanent lather, or one lasting for five minutes, is formed is noted. Every Cc. added corresponds to one degree of hardness. If more than 15 or 16 degrees are recorded, distilled water must be added so as to bring it down to this, and a smaller quantity used. The permanent hardness is similarly estimated after removing carbonates by boiling to one-third of bulk.

8. Poisonous metals are estimated by comparing colors obtained by usual reagents with those got from standard solutions. Copper in very small quantities may be detected by potassium ferrocyanide on concentrated samples, especially if a little ammonium nitrate be added; zinc by the same reagent. The former metal had been found by the author in sufficient quantities in distilled water from the best London houses to condemn it as a drinking water.

**III.—Organic Analysis.**—Organic impurities demand most attention. 1. The use of potassium permanganate to oxidize the organic matter is still a very important method. A known quantity of the sample and of a standard solution of the permanganate with excess of dilute sulphuric acid are stood in contact for four hours at 80°, and then the amount of permanganate left is estimated. From this the amount absorbed is found. The permanganate standard solution generally is such that 10 Cc. provide 1 millegramme of oxygen. As the acid absorbs a little of the permanganate, a blank estimation is first done by calculating from the amount of sodium thiosulphate required to decolorize the iodine set free by the reaction of potassium iodide and undecomposed permanganate compared with the amount required for the blank solution, whose strength in oxygen was regulated by the addition of permanganate solution. Starch is used as indicator. An objection has been raised to this process, in that albumen does not readily absorb oxygen from the permanganate. Whatever be the nature of the organic impurities (it is easy to talk of albumenoids, but not so easy to produce evidence of the real nature of these impurities) the oxygen absorbed from permanganate, the so-called albumenoid ammonia of Wanklyn, and the direct estimation of organic carbon and nitrogen, by Frankland's process, show results nearly always coincident. The moist combustion process, a modification of the last test, is performed by boiling a liter of water down to 100 Ccs. with permanganate, and estimating the permanganate used up.

Wanklyn's and Frankland's Processes.—The former is more general and simpler, the latter tedious, expensive and difficult in manipulation. Wanklyn says the latter is untrustworthy, but the author of this paper considers it to be undoubtedly the nearest approach to a scientific analysis of water yet introduced. These two processes are the only ones, excepting the oxidation process, commonly used in this country.

2. Wanklyn's Process.—Solutions required are a .03146 grammes to the liter solution of ammonium chloride, Nessler's solution (the great secret in preparing this is to keep the ingredients quite cool when mixing), alkaline permanganate soluti on (8 grammes of permanganate, 200 of sodium hydrate, 1,100 Ccs. of distilled water, boiled down to two-thirds, to make certain of any organic nitrogenous matter breaking up). Preserve this last in a well-stoppered bottle. Care must be taken that all water used is free from ammonia. If only a little is wanted, distil tap. water with a few drops of sulphuric acid; if a large quantity, collect distillate after the still has been at work two hours. For drinking water 700 Ccs. is generally taken. To insure freedom from ammonia in the condenser the still is first boiled out, and the sample distilled till the distillate contains no more ammonia. The distillate is usually collected in lots of 50 Ccs., in Nessler's glasses, which are tested by comparison with standard solution of ammonia or Nessler's reagent. A grain or two of sodium carbonate may be added before distilling, to volatilize completely the ammonia. This will give the so-called free ammonia. By this method ammonia may be obtained from other bodies. The "albumenoid" ammonia is got by distilling the remains in the retort with the addition of 50 Ccs. of the alkaline permanganate solution. The process is rapid and approximate, but as different organic bodies yield different percentages of their total nitrogen, thus treated, the amount found is no clue to the amount of organic matter, and a sudden reap-

pearance of ammonia sometimes occurs on prolonged distilling, after it seemingly had been all released.

3. The Frankland-Armstrong process, as it is called sometimes, is worked thus: A liter, or less if the water is poor, is usually taken. Every piece of apparatus must be quite clean, and should be washed with strong sulphuric acid and purest possible water, and the reagents must be quite free from organic contamination. The copper oxide should be burned in a muffle for four or five hours at least before use. Place the sample in a flask of about a liter and a half capacity, add 10 Ccs. of pure sulphur dioxide solution, 10 Ccs. of solution of acid sulphite of sodium with excess of sulphur dioxide, and three or four drops of ferrous chloride solution. Boil for half a minute to expel the carbon dioxide, cool and evaporate to dryness over a water bath. It is then mixed with the copper oxide and placed in the usual manner in the combustion tube. The gases from ordinary London water seldom measure more than 7 Ccs. They are a mixture of sulphur dioxide, carbon dioxide, nitric oxide, and nitrogen. The first named is absorbed by potassium bichromate; the nitric oxide is oxidized to nitrogen peroxide and absorbed by caustic potash, the excess of oxygen is removed by pyrogallol, and the residual gas is pure nitrogen.

**IV.—Biological Examination.**—Before this is done the examination is not complete. The suspended matters at least must be subjected to careful microscopical examination, to see any evidence of organic pollution in muscular tissue or vegetable cells, or in second rate water, even large living organisms. The enumeration of the organisms as in an ordinary bacteriological examination is of relative value only, and in the author's opinion of little value for hygienic purposes. Determined for definite pathogenic organisms by a specialist, bacteriological examination is very valuable. Muscular fibers being present is of great importance, and points to sewage or other objectional organic refuse.

## MODERN IODOFORM.*

By Luther F. Stevens, Brooklyn.

Given an alkaline solution containing the combining radicle methyl $CH_3$, or a compound from which it may be easily obtained, and to that present in acceptable shape any of the haloids, a triatomic ether results having three of the corresponding haloids placed upon three units of carbon, one hydrogen remaining and two being given off. These still hold an ancient terminal to the common name, as fluoro, chloro, bromo, iodoform, because they were at first supposed to be derivatives from formic acid $CH_2O_2$, and upon that basis chloroform had for its chemical title terchloride of formyl.

Alcohol was formerly used to furnish the methyl needed, that being split off and the alcoholic radicle remaining giving formates of the alkali used, $CH_3CH_2OH + NaOH + 3Cl = CHCl_3 + CHOONa_2$, but of late years acetone has come into use because having an ethereal methyl much more easily removed than the component one of alcohol, and being now readily obtained on account of its production by the works distilling wood for methyl alcohol and acetic acid.

Although these facts have been long known, yet it is but a few years since available commercial processes were devised which gave from this source chloroform at much less cost than before; and still further time was required to develop others of the series on a profitable industrial scale which was inaugurated by two chemists in France, MM. H. Suilliot and H. Raymond, who brought out

IODOFORM FROM ACETONE.

These two gentlemen working upon kelp ashes, brought in quantity from the French sea coast to the City of Rouen on the River Seine, not far from its mouth, a famous town for chemical and other factories, schemed out a method for working up the iodine contained in this seaweed directly into iodoform instead of endeavoring to produce iodine alone in competition with England, which country controls the "nitrate" beds on the western coast of South America.

The kelp ash as it arrives is percolated with water as formerly for iodine, the solution containing all soluble salts; then, instead of concentrating and freeing from other salts than iodides by crystallization, only sulphates and sulphides which appear in traces are gotten rid of, the filtered liquid containing chlorides, bromides and iodides is now treated with acetone and hypochlorites, when iodoform commences to fall in a voluminous, cloudy precipitate, and upon completion of this reaction the bromides are obtained from the residual mother liquors.

This is the original claim of the patentees, although other statements have appeared in print by those who have visited the plant but apparently not comprehended all of the steps.

As thus obtained it was called "absolute iodoform," from its greater solubility and less order; it is very light, apparently amorphous but really in exceedingly minute scaly crystals. It is nearer to pale salmon in color than lemon yellow, is very soft in texture, no longer harsh when applied to sensitive surfaces. It requires no purifying with accompanying recrystallization and final powdering, and dissolves without residue in alcohol, ether, chloroform and bisulphide of carbon.

Their works were soon able to undersell both English and German makers, and soon these for self protection had to call down the iodine ring. Quite possibly you may remember that in 1889 a heavy drop appeared in the price of iodoform and iodine which has not since been raised, and that iodoform of the present day is entirely different in appearance from the older kind. We do not enjoy the smell now, but should you take a bottle of the old orange yellow crystals, and one of this opened at the same time, the wonderment would be, however did we stand it?

These gentlemen published their methods in the Spring of 1889 and at the same time gave an alternate process for small work by which potassium iodide, the cheapest salt made, can be utilized, and this latter seems now to be used by all who have not access to seaweed, because it has proved much easier, simpler, quicker and less costly than by any procedure from alcohol, as it is claimed that 98 per cent. of iodine is transformed against 75 per cent. of the best heretofore and then only by tedious successions of manipulation.

My attention was drawn some two years ago to this subject because it was new in application although old in theory, that there were three formulas existing in this country, and because of its adaptability for class experimentation the latter proved a success.

The difference in proportions given led to a series of experiments which confirmed the theoretical position, which it will be seen is practically the line given by the two gentlemen of France.

The original in the reprint which I have seen reads:

| | |
|---|---|
| KI | 50 |
| Acetone | 6 |
| HoH or NaOH | 2 |
| All in water | 1000 to 2000 |
| Dilute solution of hypochlorites | q.s. |

*Abstract of paper read before the Kings County Pharmaceutical Society at the October meeting of 1893 and communicated by the author.

One gentleman in careful endeavor to give a comparsion of this and other ways, and where costs are particularly under attention, is reported in A.P.A. Proceedings 1890, page 612, from proceedings of Michigan State Association 1889. Mr. T. W. Bowen states that in working upon one pound lots he was able to produce nearly at 22 per cent. less than by Filhol's, labor and time not being counted on either side, which, if done, would have made the balance still greater. His reads :

| | |
|---|---|
| KI | 75.0 |
| Acetone | 9.3 |
| NaOH | 1.9 |
| Water | q.s. |
| Solution of chlorinated soda, formula of 1870, about | 7381 |

Another gentleman, Mr. Boyce, of Ann Arbor, claims that the first publishers were impractical, and gives a revision in which a strong point is made of necessity for a large excess of acetone.

| | |
|---|---|
| KI | 50 |
| Acetone | 40 |
| NaOH | 5 |
| Water | 1000 |
| Officinal solution of chlorinated soda, 1880. | q.s. |

A strictly molecular formula would be laid out in this manner :

| | | |
|---|---|---|
| Sol. No. 1. | $3KI$ 496.8 | 49.68 |
| | $CH_3—Co—CH_3$ 58.0 | 5.80 |
| | $2NaOH$ 80 | 8.00 |
| | Water 10,000 | 1000 |
| Sol. No. 2. | $3NaOcl$ 223.50 | 22.35 |

in dilute solution as contained in solution of chlorinated soda, U. S. P. 1870, the best.

$$3KI + 2NaOH + CH_3-Co-CH_3 + 3NaOcl.$$
$$= 3NaOI + 3Kcl.$$

$3NaOI + CH_3-Co-CH_3 + 2NaOH + 3Kcl = CHI_3 + CH_3-Co-Na + 4NaOH + 3Kcl$ + other sodium salts present in solution No. 2, as chlorides, carbonates, and so forth, these being in variable quantities.

Then 379.8 of theoretical iodine in the salt and 15. of methyl from the acetone less two hydrogens = 13, yield 392.8 of iodoform, and of this the workers say that 98 per cent. can be reclaimed in the long run, and as all side products formed are soluble in the mother liquor and also in water the precipitate is easily washed and requires no further treatment.

The objector to the original formula bases his excess of acetone upon a theory that all alkalies present and freed during the process are taken up as acetates, and in consequence more ultimate product is obtained. His actual difficulty comes from another source, the chlorinating liquor, which as said before is variable; for this purpose it should have a large excess of soda, therefore the formula of 1870, when strictly carried out with high test bleaching powder as we would ordinarily do when upon special work, is better than that of 1880, which liberates iodine too fast. When the latter is made from commercial materials it will average well, as not all the carbonate is decomposed.

Both solutions need to be alkaline, number one strongly by means of caustic, and number two through carbonate always present and more so in the 1870 preparation. It is sometimes a good plan to add a bicarbonate to number two before using, because in this finely balanced structure by using dilute solutions, and chlorinating slowly, iodine, sodium and acetyl are liberated in proportionate quantities and no loss of iodine occurs by formation of iodates, which are the bane in alcoholic procedures where heat must be used. To prevent this possibility by too fast additions of number two a slight excess of acetone is desirable. When large, however, it clings to the precipitating iodoform, adding its peculiar smell to what is already bad, and is only removed by long washing.

No. 1 solution should be placed in a tall cylinder having some four times that capacity, and arranged for convenient agitation, the chloridizing liquid allowed to pass quite slowly, and for small lots caused to drop from a height sufficient to give a slight circulation from the force of each impact. With a test tube a small filter fitted in the mouth answers; for a thousand gramme cylinder a funnel is needed, and the whole given an occasional rotary motion; for four or five thousand gramme containers a cover holding several funnels. Large works use filtering colanders with holes allowing drops at a time to fall some two or three feet, or a spray apparatus and mechanical agitation, never a stream or a large quantity at once. When commencing an operation it is often advantageous to dilute number two one-half or more, and possibly, as said before, to add sodium bicarbonate.

The first drops upon contact should immediately cause a cloudy and heavy precipitate of salmon tint. If a reddish ring appears around each, then hypoiodides are formed too fast, because either the dropping liquor is too strong or not sufficiently alkaline, needing the correction given in the paragraph above. By the time, however, that the original solution has doubled from additions, number two can be added stronger and a little faster; if now the red coloration appears give acetone in small portions at a time as it is being used up by chlorides from number two. One or two trials will serve to adjust this. If to 1,000 Cc. of solution at this stage showing redness 10 Cc. do not serve to give the immediate cloud then alkalize a little, but this step is seldom needed here as the solution has been growing in alkalinity with its additions; it is more apt to need acetone, and that is cheaper than to lose iodine by degeneration to iodates.

With a starting solution of two to five liters the precipitating will apparently cease in about one hour if the dropping has been constant and in sufficient quantity, allow time for complete settlement, decant the supernatant clear liquid, which being quite dilute and alkaline can be treated much faster, while the precipitate is being filtered, washed and dried, using the same precaution as before as to color. If now there has been kept a slight excess of acetone, when available iodine has been used up, the hypochlorites will attack that and build chloroform in sufficient quantity to be readily perceived by its smell.

The mother liquor will hold in solution considerable iodoform, so it is wise to again decant from the second precipitate, and treat still more freely with number two when the major portion will be thrown out. The remaining liquor after yielding this last deposit upon a filter, being surcharged with hypochlorites, alkali, and other decomposition products, including a remnant of iodoform, is available for treating tail end liquors from the succeeding batch in place of new soda solution, thus recovering about the last possible portion from each ; in any case whether working with this or new remember that *an excess* redissolves some of the precipitate we wish to save.

When working upon quantities, all operations are conducted in rooms where no direct sunlight enters, owing to its rapid decomposing effect upon this new formed product. For small work and accurate determinations keep test tubes or cylinders wrapped in two or three thicknesses of manila paper and filter in a shady corner, drying wet filter and contained precipitate rapidly in a column of warm air.

Owing to this great change in physical appearance between iodoform of to-day and ten or five years ago, a strong attempt was made by several gentlemen of the American Pharmaceutical Association to get the text changed regarding description in the Pharmacopœia of 1890, but it still remains "in small lemon yellow crystals," and not a suggestion that another style is much more if not entirely used, which is soft, voluminous and as having no crystals visible to the naked eye.

## Notes, Queries, and Answers.

*We shall be glad, in this department, to respond to calls for information bearing on pharmacy or any of its allied topics, and cordially invite our friends to make use of this column.*

*When sending for the formula of an unusual, patented or proprietary compound, the query should be accompanied with information regarding the locality in which it is used, its uses, and reputed effect. When it can conveniently be done, a specimen of the label used on packages of the compound should also be sent.*

**Stove Blacking.**—G. H. B., Pittsfield, Mass., wishes to know how to make a paste of plumbago that will not dry. As he probably wishes to use it as stove blacking, we give several formulas below:

1.—Mix two parts of black lead, 4 parts of copperas and 2 parts of bone black, with water, so as to form a creamy paste. This is an excellent polish, as the copperas produces a jet black enamel causing the black lead to adhere to the iron.

2. Plumbago ..... 2 lbs.
Water ..... 8 ozs.
Turpentine ..... 8 ozs.
Sugar ..... 2 ozs.

Knead thoroughly and keep in tin boxes. Apply with a brush.

3. Plumbago, make into a thin paste with sodium silicate or water glass. This makes an excellent stove polish and should be brushed thoroughly.

4 Pulverized black lead ..... 2 lbs.
Spirits of turpentine ..... 2 gals.
Water ..... 2 ozs.
Sugar ..... 2 ozs.

5. Mix 5 parts black lead, 5 parts bone black and 10 parts of iron sulphate. Use water q. s. to form a paste. This is an excellent preparation and the coating is very permanent.

6. Reduce graphite to an impalpable powder by grinding in a mill with water, dry; use with water first, then dry and polish. This is the base of nearly all commercial stove polishes.

7. Turpentine and black varnish, put with any good stove polish, is the blacking used by hardware dealers for polishing heating stoves. If properly put on, it will last throughout the season.

*Paste Stove Polish:*

Pulverized black lead ..... 2 lbs.
Spirits of turpentine ..... 2 gals.
Water ..... 2 ozs.
Sugar ..... 2 ozs.

*Liquid Stove Polish:*

Bone black ..... 2½ parts
Pulverized graphite ..... 2½ parts
Copperas ..... 5 parts
Water, q. s. to form a creamy paste.

*Liquid Black Lead Polish:*

Pulverized black lead ..... 1½ lbs.
Turpentine ..... 1½ gills
Water ..... 1½ gills
Sugar ..... 1½ ozs

**Kephir.** C. C. B., New York.—Kefir or Kephir is a drink containing lactic acid and alcohol and made by fermenting milk. The fermentation is induced by the addition of kefir grains. These occur in irregular clumps varying from the size of a bean to that of a walnut, consisting of a peculiar ferment, composed largely of the *Bacillus Caucasicus*, also known as *Dispora kaukasica* or *Bacterium Caucasicus*.

The bacillus itself forms rod-cells 3.2 to 0.8 micromillimeters long and 0.8 micromillimeters broad, sometimes provided with a flagellum and exhibiting a slow oscillatory movement. It has a spherical enlargement at each end in each of which forms a spore 0.8 micromillimeters in diameter. The ferment originally came from the Caucasus, but is now cultivated all over the civilized world to a certain extent.

**Antidotes.** J. E. E., New York.—We give below a list of the more common poisons and their antidotes. To present a complete list would take up more space than would be desirable. It should be understood that the stomach must be emptied as nearly as possible of its contents before the antidote is administered, except in cases where an emetic is contra-indicated, as the corrosive acids. Emesis may be brought about either by the use of the stomach pump or emetics; the former method being the more preferable.

*Acids* (mineral).—Alkalies, lime water, soap, oil, mucilage. (The stomach pump or emetic should not be used in case of poisoning by mineral acids.)

*Arsenic.*—Hydrated sesquioxide of iron, dialyzed iron, hydrated magnesia; followed by opium and stimulants.

*Belladonna and atropine, hyoscyamus and hyoscyamine.*—Opium, eserine and pilocarpine; tannin, compound solution of iodine.

*Carbolic Acid.*—Saccharated solution of lime, sulphate of soda or magnesia in solution.

*Chloral.*—Strychnine, ammonia, atropine, galvanism, heat.

*Chlorine.*—Ammonia and albumen.

*Chloroform* (by inhalation).—Drawing out the tongue and artificial respiration, ammonia by inhalation and intravenous injection, digitalis subcutaneously; oxygen inhaled.

*Copper Salts.*—Albumen, soap, tannin, lime water, oil.

*Digitalis.*—Tannin, persalts of iron. Aconite, amyl nitrite and nitro-glycerine as physiological antidotes.

*Hydrocyanic Acid.*—Cold affusion, and artificial respiration, injection of atropine subcutaneously; ammonia.

*Iodine.*—Starch followed by emetic, albumen, lime water, soap.

*Lead.*—Diluted sulphuric acid, alum, epsom salts, milk.

*Mercuric Chlorides and all Mercurials.*—Albumen (flour mixed in water or white of egg), tannin, lime water.

*Opium.*—Cold affusion, faradization, artificial respiration, atropine and caffeine subcutaneously; hot coffee.

*Phosphorus.*—Emetic of copper sulphate, old turpentine (unrectified); hydrated magnesia; transfusion. No oils or fats.

*Silver Salts.*—Common salt, albumen, tannin.

**Characteristics of Cider Vinegar.** E. A. S., Cleveland.—The chief points of distinction between cider vinegar and acetic acid or white vinegar were pointed out in a paper written a few years back by Dr. B. F. Davenport. The residue of a pure cider vinegar has certain characteristics, the principal of which are the following: It will be about three per cent. in weight, and never less than two per cent. It is always soft, viscid, of apple flavor, somewhat acid and astringent in taste. A drop of it taken up in a clean loop of platinum or of iron wire and ignited in a colorless Bunsen gas lamp flame imparts to it the pale lilac color of a pure potash salt, without any yellow due to sodium being visible. The ignited residue left in the loop of wire will be a fusible bead of quite a good size, and it will leave a strong alkaline reaction upon moistened test paper, effervescing briskly when immersed in an acid. The presence in a vinegar of the *slightest* trace of any free mineral acid will prevent the ignited

residue having any alkaline reaction, or effervescing with acids. The presence of any practical amount of commercial acetic acid added to "tone up" the strength of the vinegar, will cause the igniting residue to impart another color to the Bunsen flame, and the residue itself will have a smoky, pyroligneous taste or odor. Any corn glucose used in the vinegar will cause its residue when ignited to emit the characteristic odor of burning corn; and as the last spark glows through the carbonized mass, to usually emit the familiar garlic odor of arsenic. The presence of any acrid vegetable substance in a vinegar is known by the residue having a pungent taste, especially if before the evaporation the vinegar has been exactly neutralized with soda.

## Miscellaneous Formulas.

FOR ARTICULAR RHEUMATISM.

[DR. BOURGET, *Repertoire de Pharm.*]

| | |
|---|---|
| Salicylic acid | 10 grammes (154 grs.) |
| Lanolin | 10 grammes (154 grs.) |
| Spirit of turpentine | 10 grammes (154 grs.) |
| Simple ointment | 80 grammes (20½ ʒ) |

Apply over the affected joints.

FOR REMOVING FRECKLES.

[DR. R. B. MORISON, Am. Dermatological Society.]

| | |
|---|---|
| Corrosive sublimate | gr. vij |
| Distilled water | ʒ vj |
| Spirit of camphor | ʒ ss |
| Rose water | ʒ v |

Three or four thicknesses of linen, cut to cover the seat of freckles, are moistened with the solution and placed upon the face at night until they dry, when they are taken off. Whatever remains on the skin is left there till morning and then washed off. After a few nights' application the face becomes red and the epidermis begins to peel off in fine scales. Then an ointment is used night and morning, the application being made by gently rubbing it over the face for five minutes at a time with a clean finger.

ORANGE BITTERS.

| | |
|---|---|
| Gentian root | ½ oz. |
| Chiretta | ½ oz. |
| Cusparia | ½ oz. |
| Ginger | ½ oz. |
| Fresh lemon peel | ½ oz. |
| Orange wine | 2 pints |

Macerate ten days and filter.

STOMACHIC BITTERS.

| | |
|---|---|
| Gentian root | 4 ozs. |
| Bitter orange peel | 3 ozs. |
| Chiretta | 1 oz. |
| Serpentary root | 1 oz. |
| Quassia | ½ oz. |
| Cloves | ½ oz. |
| Red sandalwood | 3 drms. |
| Glycerin | 60 fl. ozs. |
| Proof spirit | 6 pints. |

Crush all the solids to coarse powder. Macerate for 10 days, and filter.

For sticking glass labels on drawers, the best cement to use is a thick solution of shellac in benzole, in which gutta percha in the proportion of 1 in 12 has been dissolved.

### Electroplating Formulas.

[VON PFANNHAUSER.—*Chemiker Zeitung.*]

GOLD BATH.

| | |
|---|---|
| Gold chloride | 25 grammes |
| Potassium cyanide | 150 grammes |
| Water | 1 liter |

For anodes use platinum plates, or they may be replaced with advantage by tinned iron plates 3 to 5 millimeters thick.

SILVER BATH.

| | |
|---|---|
| *a* Silver cyanide | 310 grammes |
| Potassium cyanide | 470 grammes |
| Water | 10 liters |
| *b* Silver chloride | 330 grammes |
| Potassium cyanide | 450 grammes |
| Water | 10 liters |

Hang the silver plates on strong steel wires. Lead, zinc and iron articles must, before silvering, first be coated with copper in an alkaline bath and then suspended in a silver nitrate bath.

COPPER BATH.

| | |
|---|---|
| Potassio cupric cyanide | 809 grammes |
| Potassium cyanide | 29 grammes |
| Ammonium chloride | 29 grammes |
| Anhydrous sodium carbonate | 10 grammes |
| Water | 1 liter |

Work the bath at a temperature of 20 to 25° C., with a current of three volts at a strength of 0.5 amperes.

BRASS BATH.

| | |
|---|---|
| Potassio-cupric cyanide | 40 grammes |
| Potassio-zinc cyanide | 409 grammes |
| Potassium cyanide | 2 grammes |
| Ammonium chloride | 2 grammes |
| Sodium carbonate | 10 grammes |
| Water | 1 liter |

TIN BATH.

| | |
|---|---|
| Tin chloride, fund | 400 grammes |
| Soda | 500 grammes |
| Potassium cyanide | 100 grammes |
| Water | 10 liters |

ANTIMONY BATH.

| | |
|---|---|
| Sodio antimonic sulphate | 50 grammes |
| Water | 1 liter |

For anodes use plates of antimony.

## Bibliography.

DIE FABRIKATION DER MINERAL UND LACKFARBEN, Enthaltend: Die einleitung zur darstellung aller künstlichen Maler und Anstreicherfarben, der Email-Russ und Metallfarben. Ein Handbuch für Fabrikanten, Farbevarrenhändler, Maler und Anstreicher, Dem Neusten Stande der Wissenschaft ensprechend dargestellt von Dr. Joseph Bersch, mit 43 Abbildung Zweite, neubearbeitete Auflage. Wien, Pest, Leipzig, A. Harteleben, Verlag 1893.*

The contents of the work may be divided into four parts, the first being introductory in character, describing the physical and chemical characteristics of the various raw materials used and the general processes of manufacture.

The second part deals with the manufacture of the mineral colors, the pigments being grouped according to the color which they produce.

The manufacture of colors of organic origin is treated of in the third part of the work. This includes the lakes made by combining a mineral with an organic substance.

The fourth division of the work concerns itself with the examination of colors, and will prove of much practical value, as tables are well arranged, clear and intelligible.

There is also added a chapter on the trade nomenclature of the colors, which is of much interest, though scarcely so complete as it might be.

The work contains some 648 pages and is issued in paper in the uniform style of the valuable collection constituting Harteleben's Chemico-Technical Library, of which it is a worthy number.

* The Manufacture of the Mineral and Lake Colors—A Hand-book for manufacturers and dealers in paints, painters, etc. Second revised edition, with 43 illustrations by Dr. Joseph Bersch, Vienna, Pesth, Leipzig. Published by A. Harteleben, 1893.

*(Written for the American Druggist and Pharmaceutical Record.)*

## TIPS ON ADVERTISING. XIII.

By Wm. Halley,
Chicopee Falls, Mass.

In this outline I shall take it for granted that the store is in good shape, with modern improvements, that it contains a good stock, and is well manned with competent, interested clerks. A large part of the advertising should be done by the clerks over the counter and many of the home-made preparations should be advertised among the doctors by calling attention to them and giving them samples to test as they see fit. This part of the advertising I shall not consider, but confine my attention to that part of the business which falls under the head of printed matter.

Every store should make its prescription trade its main advertisement; either directly or indirectly, it should be continually pushed to the front. Next should come home preparations and articles of materia medica. Following these should be druggists' sundries and any other line of goods the store may carry in stock, such as stationery, paints, oils, etc.

The prices of patent or secret remedies are so universally cut that there is no pleasure or profit in pushing them beyond the distribution of such printed matter as the proprietors may furnish. The conditions surrounding the sale of liquors are so peculiar that unless one wishes to run a "gin mill" he can advertise them all that is necessary by personal solicitation over the counter.

The bulk of printed advertising should be carried out along three lines, their importance being in the order mentioned. First, circulars and fliers; second, newspapers, and third, placards for windows, fences or walls.

In localities where a *good* local newspaper is thoroughly distributed that is always the best medium of reaching the public, but this is so seldom the case that in general a booklet or circular once a month supplemented by a flier once a week is the most satisfactory way.

In the booklet I would use a good quality of paper, clear plain type and but little display, depending principally upon the subject matter to interest the people. Fully one-half of the matter should be of an educational type bearing directly on the business. For instance a comparison of the drug business, with business of other kinds; a sketch of some article used giving an outline of its history, its properties, and the process of preparing it for use; the position of U. S. P. preparations *vs.* secret remedies; poisons and their antidotes, etc., etc. The amount of such matter is almost without limit. The public as a rule are very ignorant concerning the surroundings of the druggist, and very curious; a little educational matter of this kind would increase their interest, and lead them into the way of buying a better class of goods.

Advertise the doctor; not the individual, but the profession. The interests of the doctor and the store lie side by side; a word fitly spoken may mean dollars for both which otherwise would be wasted on nostrums.

Fill an occasional page on what to do in emergencies, or curious items and funny things that happen in the store, only have everything point toward the business.

When the stock in trade is advertised, speak of only one thing or one line of goods on a page. Don't attempt to run in the whole stock. People already know of the general assortment, and it is the talk about the single article that attracts their attention.

I would make the size of the booklet about 6 by 3½ inches, with eight or twelve pages of reading matter, and, if not too expensive, eight pages for memoranda, ruled with a space for each day of the month, the latter alternating with the former. On the first page of the cover print the calendar of the month and the name of the firm in black; the balance of the outside of the cover to be covered with some small geometrical figure printed in red. On the first page of the book proper have the almanac for the month, *i. e.*, the astronomical calculations, the balance of the matter as one's fancy suggests, with not more than four or five pages of advertisements proper.

A POINT TO BE OBSERVED
Is the point of a-ttack. Guard the point of attack and you won't get sick.
In Winter throat, nose and lungs are to be guarded. Do this by putting on a little extra clothing, both inside and outside the skin. The tailor or dressmaker will furnish the clothing for the outside of the skin. The clothing worn below the skin is fat. The best fat producer is cod liver oil in some shape. We have it in all shapes.
Plain Pure Norwegian Cod Liver Oil.
Emulsion of Pure Norwegian Cod Liver Oil.
Wine of Pure Norwegian Cod Liver Oil.
Then we have chest protectors—the best and at low prices.
If in spite of these precautions you do get sick, we put up prescriptions—promptly, carefully, accurately.
JOHN BENNETT & SONS,
Prescription Druggists,
WINDSOR, N. Y.

These booklets should be supplemented by a flier every week, or an advertisement in the local paper. In each of these I will speak of only one thing, and that usually the thing being pushed in the store, whether new goods, old goods, or some home-made preparation.

Use a good quality of paper—it does not pay to be stingy in this—good clear type and not much display. Print sometimes, on the back of some pretty picture card, some game or puzzle. Study variety, so that when people see your name on a flier they will take some pains to satisfy their curiosity. Don't make the flier too long; describe the article in simple terms, and the advantages it has over others, so that the

reader, if he ever wants the article described, will at once think of it and the advertiser in the same connection. At the foot of every flier, in small type or italics, draw attention to the prescription work in some short sentence, changing every time.

For newspaper work I think it would pay the advertiser to own two or more fonts of type of a different style from any used in the paper. One of 18 point for the title and one of 12 point for the body of the advertisement. This would give a distinct character to the advertisement, attract attention, and not add much to the expense.

A four inch space gives room enough for a good advertisement, and is as much as a majority of druggists would care to use. I should prefer to have it set up at least half of the time as a two inch double space.

..A..
CHINA
.MUG.

Would be a nice Christmas present to give to the children, though they wouldn't want such a tough one as this.

I have a lot of much handsomer ones, besides a number of taking little presents for the holiday season—perfumes, sachets, toilet articles, cologne bottles, dressing cases, etc.

Come and look at them even if you don't want to buy.

I've also got the flavorings for the Christmas cakes, the thyme and sage for the turkey, and then the medicine that you need afterward—pepsin, pills, etc.

Drugs, . . .
Toilet Articles
and Fancy Goods.

JOHN POTTER,
HELENA, MONT.

Should the matter nearly fill the space put a border around it, one of unique design and your own. If the matter is scant set it up nearly solid in the middle of the space without a border. If the printer uses his own type have as many changes as possible, thereby getting people to watch for the next one. Occasionally put in an advertisement that will require quite a variety of type, but generally use only two or three.

Change every week, presenting whatever you are pushing in the store, and a good plan is to have some special thing to call attention to every week. People may buy or not, but they will not forget where they can get such an article when they or their friends need it.

Brevity is not only the soul of wit, but it is also the soul of the advertising placard. Its mission is different from the ordinary advertisement; its object is simply to call attention, not to educate or explain advantages. Few words should be used, and these should be odd in arrangement, expression or idea, so as to catch the eye and then the thought of the passer by. Perhaps the most effective style at present is some simple statement printed with 48 point Roman or similar type on plain white cardboard, with a wide margin on all sides, and no ornaments. This is odd, because nearly all placards at the present time abound in ornamental display. This style of advertising, owing to its limited circulation and its expense, is the least profitable for the druggist, yet there is no doubt that if properly done it will amply pay for all expenses.

In all advertising strive to gain the attention of the public by telling them something about the drug business that will interest them, and at the same time set them to thinking about it in the right way; then tell them the story of a part of the stock in trade *as it is* without exageration, just as you would tell them orally, and the seed will be sown that will bring you good fruit afterward in a hundred different ways that you do not suspect.

Make your advertisements truthful—as good as your bond.

Don't exaggerate.

Don't abuse your competitors. You do when you claim that his goods are inferior to yours.

Excite curiosity, and don't satisfy it till you get people into your store.

Push the goods you make the most on; that is, if the goods are worth pushing.

Show the difference between the drug business and every other, and why the price of professional labor should be added to the cost of goods.

Few druggists have the time, ability or inclination to prepare a monthly circular, and here is the opportunity of the advertising expert or publisher. If some one would do a little canvassing among the retail druggists, he could probably get at least one druggist in each locality that would be willing to make a trial of the plan. Such a circular could be prepared that would do for any druggist to use by simply changing the names of firm and place. This would greatly reduce the cost and bring it within the reach of any enterprising druggist, who could supplement it by weekly circulars or advertisements of his own. The one objection to this would be that two druggists in the same locality would be unwilling to use the same advertising matter.

Another way and perhaps a better one if once successfully started, would be for the druggist associations to prepare the monthly booklets, and furnish them to such of their members as wished for them at about the cost. This would give them an air of authority, and place the matter in such a way that every member could use them without any feeling of jealousy.

The true and only way to fight the cutter is to meet him on his own ground. Sell the patents and secret remedies for the same price as he does, and push the legitimate goods of the trade by advertising with the same skill and persistency shown by the proprietors. The cutters don't cut for fun, but for an advertisement, and when you meet their prices, and stop their cry of selling cheaper than the cut-throat druggist, you take the wind from their sails, and they will soon leave the field to whom it belongs. If druggist associations would give up the annual—impossible—plans of combining the retail druggists and the manufacturers and adopt some scheme to furnish advertising matter to their members they would be taking a long step in the direction of the legitimate business methods of the age.

# News and Notes.

## Gotham Gossip.

Out-of-town druggists have little conception of the great expense to which metropolitan pharmacists go in the matter of holiday displays. I dropped into Richard Hudnut's bijou pharmacy on Broadway near 23d street the other day and was shown around the premises by his courteous manager, A. W. Stewart. The latter showed me sachets and sachet powders, atomizers, burning essences and perfume burners, the last mentioned being the latest metropolitan fad. The display of sachets is worthy of special comment, being a most unique one. First I was shown a series of historical sachets illustrating the different epochs of French history, beginning with the reign of Francis I. and ending with the Empire. Each satchet bears on its face the heraldic crest of the reigning family of the period, and is a marvel of artistic needle work. The body of the sachet, which is double, is composed of fine satin, and the heraldic design is traced in silken thread beautifully embroidered, the whole being bordered with gold or silver wire according to the general design. Mr. Hudnut has in his possession a sachet which was made expressly for the Empress of Russia. Some rule of court etiquette forbade her accepting the gift, and Mr. Hudnut with characteristic enterprise secured it for exhibition. It is a massive affair in brilliant satin, about as large as an ordinary chair cushion and of a deep orange color. The royal arms of Russia (consisting of a double headed eagle bearing the usual emblems and having as a centerpiece the figure of St. George in the act of slaying the dragon) are embroidered on the front of the sachet in threads of gold, silver and silk, the whole standing out in clear relief. The selling price of this sachet is placed at $175. The display of perfume burnersis most attractive. These articles are made of cut glass and Russian enamel of the period of the Byzantine Empire and retail from $25 to $75, according to style.

The item below taken from the *Sun* was handed to me last week and instanced as a suggestion which drug clerks might act upon with advantage both to themselves and employers.

"Did you notice," said a shopper, "that the clerk called me by my name? I never traded with him but once before, but he remembers my name and addresses me by it just as though I were somebody. Do you know that that always pleases me greatly?"

W. J Quencer, of the Windermere Pharmacy, 400 West 57th street, appears to be doing a prosperous business despite the financial stringency. Mr. Quencer believes in putting his money into stock, and as a consequence the "Windermere" has a well furnished appearance and this impresses customers favorably. He is advertising hot soda to great advantage at present and has utilized an invention of his own for dispensing this seasonable beverage. The apparatus consists of a hot soda urn of the Fox, Fultze & Webster pattern which is connected with the hot water system of the building in such a way as to insure a constant supply of hot water without the aid of gas or other fuel.

The competition for the post of apothecary on the *Nictheroy* (formerly *El Cia*) which left New York last Tuesday to fight the Brazilian insurgents, was quite keen. The successful candidate is a graduate of the class of '87 of the New York College of Pharmacy, Rudolph E. Wilhelme. He was at one time in the employment of Chas. Cunz, of this city, but during the past five years had conducted a pharmacy under his own name at Newark. N. J., where his parents reside. Wilhelme was born in Dühring, Germany, and was brought to this country by his parents when eighteen months old. He served as hospital steward in the 1st Newark Regiment of the National Guard for seven years and his adventurous spirit has been often a cause of anxiety to his father and mother.

Prof. J. A. Koch, dean of the Pittsburgh College of Pharmacy, was in town Friday and Saturday of last week. He is full of his college work, and claims that the Pittsburgh College is drawing increased attention and more students yearly. Prof. Koch is lately also interested in a new manufacturing concern, utilizing waste material from some of the Pittsburgh factories for making copperas. It was his interest in this concern that brought him here on business.

F. W. Fink, senior member of the firm of Lehn & Fink, has been away on a pleasure trip, taking in Chicago, World's Fair, Yellowstone Park, various cities in Washington, Oregon and other Pacific States, San Francisco and other towns in California, and Yosemite Valley. He is now on his way home; advices to date locate him at Salt Lake City. He will eat his turkey at home on Thanksgiving day.

Mr. Durkee, of Kelley & Durkee, prominent pharmacists of Boston, was in the city last week; also the brothers C. H. and H. A. Lawton, of New Bedford.

## Boston Budget.

Andrew Blume is located at 142 High street.

Albert C. Smith has just been re-nominated for the common council.

John G. Godding, Ph.G., has added a Low Art Tile Co. hot-soda apparatus to the equipment of his store.

Dean, Foster & Co. have recently lost large quantities of goods by the handiwork of thieves. The arrest of the offenders has put a stop to this leakage.

Daniel J. Kiley, the new proprietor of the "Oxnard Pharmacy," South Boston, is putting that store through a course of house cleaning and repainting, which will greatly improve its appearance.

Boston is proud of her representation upon two of the large pharmaceutical organizations. Messrs. Canning and Patch are the right men in the right places, and their official reign in their respective capacities cannot fail to be creditable to the Hub.

Hon. Gorham D. Gilman, of Gilman Bros., long a resident of the Hawaiian Islands, and having at the present time extensive interests there, is regarded as an authority upon the many tangled problems pertaining to the affairs of the Hawaiian government, and his opinion is frequently sought upon questions relating thereto. Mr. Gilman does not look with approval upon the attitude of Secretary Gresham, and holds that his policy is shaped entirely upon the report of one man.

David R. O'Lalor, corner of Tremont and Chapman streets, is one of the most popular candidates for nomination to the common council in the 16th Ward. For some years prior to moving to the South End, Mr. O'Lalor was with Gilman Bros., wholesale druggists.

The next meeting of the Boston Druggists' Association will be held at Young's Hotel on Nov. 28, and President Davidson has decided that it shall be a "home talent" night. Prof. James F. Babcock has volunteered to give a talk on "Pen, Ink, and Paper," and the admirers of this talented gentleman will be out in force to listen to one of his best lectures. Some surprises may be furnished and a jolly evening is anticipated.

The office of the Board of Registration in Pharmacy is open on Tuesday and Wednesday of each week, with President M. Whitney in attendance. This is an innovation which the increased duties of the board rendered necessary. An examination of 42 candidates was held last week and certificates were granted to John J. Kennedy, Hopkinton; Randall LeBeau, Fall River; George W. Walker, Boston; Michael J. O'Connor, Boston; John T. Granger, Lynn; Gustave Desy, Claremont, N. H.; Hubert J. Turcotte, Boston; Jennie H. Sumner, Uxbridge; Walter A. DeWire, Medway; Paul H. Boire, Manchester, N. H. The next examination will probably be held on Dec. 5, 6 and 7.

A recent issue of one of our daily papers gave a detailed account of the "A. P. A." (American Protective Association), an anti-Catholic organization, and alleged that Charles G. Butler was a member of the Chelsea branch of that order, and that, in consequence of his membership, his business became so poor that he was compelled to abandon the branch store which he ran in that city. This report was not only unjust, but erroneous. The facts are that Mr. Butler never belonged to the "A.P.A." and was not aware of its existence. Mr. Butler has been established in the drug business on Bunker Hill street, Charlestown, for over six years, and the Chelsea branch which he was endeavoring to establish was abandoned solely through failure to secure a competent manager. When Mr. Butler gave up the Chelsea business, he moved the stock and fixtures to Charlestown Neck, and he now has two successful stores in that district.

Michael Toole, who, with his brother Stephen, was recently arrested and charged with the murder of his mother and sister by poisoning with cyanide of potassium, has been discharged. Toole was a clerk for Carter, Carter & Kilham up to January last, and the deadly drug which caused the trouble was obtained later from that firm by purchase. Stephen is still under arrest pending the investigation of the authorities as to how the vehicle (porter), came to be contaminated with a large quantity of the poison. This case is a sad illustration of the careless manner with which members of the laity sometimes handle substances of the most poisonous character. The poison in question, although properly labeled when sold, was treated as though its properties were most harmless when it reached the home of the Tooles, and the consequences which followed should be a lasting example of the folly of this course.

## Massachusetts Matters.

Frederick P. Lovell, M. C. P., '84, recently in business in Woburn, has decided to locate in Newport, N. H,

Fred Ladd, who has opened a new store at Gloucester, was formerly a clerk in St. Johnsbury, Vt.

C. H. Snow, the Belchertown druggist, has arranged the space in his new store to such good effect that it is a model of order and neatness. He has just received his new prescription bottles and is now as well equipped as before the fire.

J. A. Crane, of Clinton, has sold his High street store to W. F. Heagney and John H. Chadwick, who take possession Monday.

Extensive alterations and improvements are being made at J. G. Burque's drug store on Essex street, Haverhill, and the office is being entirely remodeled.

J. L. Towne, formerly proprietor of the drug store at the corner of Summer and Shepard streets, Lynn, and afterward connected with the shoe firm of Jones Curtis & Towne, has opened a drug store at the corner of Boston and Federal streets.

## Michigan Mention.

W. H. Burk recently lost his mother by death at Ann Arbor.

Williams, Davis, Brooks & Co. will be at home in their new building on Congress street, Detroit, in about ten days. Farrand, Williams & Clark will occupy the stores now being vacated by them.

J. J. Haarer & Co. have sold their drug stock at 222 Myrtle street, Detroit, to F. J. Ducat, a medical student, who will continue the business.

James Labelle & Co., druggists in Windsor, Ont., just across the river from Detroit, have opened a branch store on Glengarry avenue.

Hageman's drug store at Birmingham was broken into on the night of Nov. 10. Only a few articles were taken, as the robbers were frightened away.

Edward Vought, one of Escanaba's leading druggists, assigned Nov. 15. His liabilities and assets are not known.

The Anderson Mfg. Co., of Detroit, manufacturers of bicycles and druggists' apparatus, were burned out last week with a loss of $6,000 above insurance. Beck & Knight, bookbinders, were also burned out. T. H. Hinchman, wholesale druggist, had just left his new catalogue with them, which was destroyed.

M. W. Gridley, who was recently arrested in New York for forgery, obtained a considerable sum of money from Stevens & Todd, Detroit, druggists.

Dr. C. L. Howell has disposed of his interest in the drug store of Harris & Howell, of Flint, to F. H. Thompson of Manistique. Bagley Harris, the doctor's partner, still retains his interest in the store. Mr. Thompson is a practical druggist and is said to be a man who makes friends readily. Dr. Howell will continue in his old office and attend to patients as usual.

## Southern Siftings.

Battles Bros., of Hot Springs, Ark., are about to reopen a store with the stock formerly belonging to Dr. Kelly.

The drug store of W. H. Glasscock in Louisville, Ky., was entered by burglars and a small amount of stock taken.

L. P. Miller's store in Pembroke, Ky., comes in for a very favorable notice in the Hopkinsville, Ky., *New Era* of recent date.

Bismarck W. Petsche, of Louisville, Ky., has accepted a position with the Arlington Chemical Co., of Yonkers, N. Y.

Charles P. Frick, manager of the cigar department of the Robinson-Pettet Co. Louisville, reports business improving. Druggists throughout the city and State are ordering in larger quantities. He attributes the revival of business to the closing of the World's Fair.

J. P. Ward, for a number of years past the able and efficient chemist and manager of the laboratory department of H. W. Williams & Co., of Fort Worth, Texas, was married on Wednesday, November 8, to Miss Jessie, daughter of Mr. and Mrs. C. H. Ehringer, at Navasota, Texas. Both the bride and groom have great and deserved social popularity and have been the recipients of many hearty congratulations.

Thos. J. Dewberry, formerly of Lasca, Tenn., has now located in Centreville in that State.

The pharmacy at Asbury Park, N. J., conducted recently by a Mr. Coward, and formerly owned by Henry Williams has been purchased by E. E. Saunders & Co.

Edward J. Richards, who for several years was head clerk in a Front street, Plainfield, N. J., pharmacy, has started a drug store of his own on West Fourth street, at the corner of Liberty street, Plainfield. He calls his new possession "The Gem Pharmacy."

## Kings County Pharmaceutical Society.

At the November meeting routine business was postponed until after the reading by Dr. D. C. Mangan of an interesting paper upon poisons viewed particularly from the standpoint of the pharmacist. A rapid sketch was given showing the ages during which many have been known, and a strong point brought out of the accuracy of description given by Plato, of the signs of conium poisoning upon his friend Socrates when killed by the Athenians. Dr. Mangan recommended for convenience the employment by druggists of a new classification of poisons: First, two grand divisions, poisons from inorganic sources and poisons from organic sources, instead of the lengthy tables as used by doctors where exceptions are greater than the rule.

It was elicited that the inorganic heading will be found to include nearly all of the corrosives and irritants, all acting upon the upper alimentary canal, easily arranged into comparatively few sub-classes having similar antidotes, as mineral acids, alkalies, silver salts, arsenic salts, antimony salts, mercury salts, etc., while the organic list would include the ordinary classification into irritants all acting mainly upon other points than the œsophagus or stomach—excito-irritants and narcotics. Diagnostic methods were given for ready use in determining the sub-classes, as they are likely to be met in accident cases, and many convenient hints given.

He said that the regulation rule was to tell the family or patient to send for a doctor, which was proper, but ordinarily the druggist was called upon first, and often minutes stood for life or death. One great difficulty of obtaining medical aid in a hurry lay in the fact that at certain hours of the day a dozen blocks might be covered and every physician's office found vacant.

The discussion following brought out from Wm. P. DeForest and L. F. Stevens a hearty recommendation of the two divisions advocated by the speaker. Mr. DeForest had an experience with sulphuric acid which was swallowed in place of lithia water. Mr. Stevens of two teaspoonfuls of tincture of aconite by mistake for a cough mixture. Mr. Werner had delivered some camphorated oil upon request, of which enough was swallowed a few hours later to give a dose of 140 or 150 grains of camphor. A vivid description was given of the frenzy of intoxication which followed. The chairman (Dr. Brundage) had taken too much strychnine once upon a time and received an object lesson. Mr. Perkins had some time ago given out Paris green for water bugs; the housekeeper, obtaining it, dusted the kitchen wall, and then the next morning swept it all up with the same care, and was sick for a long time after from the effects of the powder inhaled.

Dr. Golding cited several instances where Paris green had not caused pain or vomiting, and this led to overlooking that as a possibility until it was found by post mortem. Many other reminiscences were stirred up also during the course of the afternoon talk.

## Boards and Colleges.

THE MICHIGAN BOARD OF PHARMACY concluded the examination of candidates for pharmacists' and assistant pharmacists' certificates on November 10. There were 120 applicants, of whom 37 passed the required examination and will receive pharmacists' certificates; 52 will receive assistants' certificates, and 31 failed to pass. The following named persons received certificates as registered pharmacists:

H. Biddlecomb, Detroit; J. C. Brockman, Bettsville, O.; H. V. Buell, Malvern, O.; S. D. Collins-Hart; J. J. Fitzgerald, Hart; F. W. Gallagher, Racine, O; C. S. Gibson, Batesville, O.; J. H. Goodhue, Detroit; T. D. Harris, Owosso; H. Hefflebower, Detroit; T. H. Joyce, Detroit; M. E. Keyes, Morenci; F. K. Kincaid, Hersey; J. S. Kerchner, Detroit; F. M. Klussman, Ada, O.; W. B. Knapp, Grand Rapids; W. H. Lamb, Ada, O.; F. J. Lane, Detroit; J. D. Lober, Jerusalem, O.; N. T. McLean, Chatham, Ont.; G. Martin Litchfield; D. C. Mohler, Carleton, O.; H. A. McKenna, Yale; H. J. Neville, Green Bay, Wis.; H. W. Packert, Detroit; B. J. Palver, Ypsilanti; T. M. Richardson, Windsor, Ont; E. J. Riordan, Sault Ste. Marie; R. D. Rowley, Ypsilanti; W. A. Rudell, Sault Ste. Marie; C. E. Shindler, New Corydon, O; C. Schriben, Moravia, O.; E. D. Taylor, Ozark, O; H. J. Thompson, Manchester, O.; J. H. Vold, Pigeon Falls, Wis; E. A. Webb, Casenovia; C. E. Woolloy, Brown City.

Assistant pharmacists—H. Agnes, Ottawa, O.; R. S Armstrong, Chelsea; E Bassett, Grand Rapids; J. C. Belcher, Windsor, Ont; H. C. Blair, Leslie; Florence Burch, Adair; George J. Buss, Detroit; H. W. Cadwell, Detroit; F. B. Chadwel, Detroit; E. M. Clapp, Oshtemo; M. E. Cooper, Jackson; P. J. DePree, Grand Rapids; E. Eastman, Detroit; B. C. Fish, Edwardsburg; C. E. Foster, Webberville; J. M. Freeman, St. Charles; A. E. Fuller, Richmond; Sama Gallagher, Saginaw; G. G. Gardner, North Star; G. W. Gankell, Bay City; M. E. Gibson, Lansing; R Goodfellow, Clio; F. J. Greene, Detroit; F. W. Hamilton, St. Charles; J. M. Hines, Ada O.; C. O. Hubbell, Jackson; N. E Leighton, Kalamazoo; W. F. Launt, Kalkaska; L. O. Loveland, Charlotte; G. J. Menold, Luther; E. L. Moore, Melvin; J. Murray, Merrill; F. L. Melelintic, Charlotte; G. H. McGillivray, Muir; J. M. Mc

Gregor, Ann Arbor; J. A. McOmber, Hastings; A. McWain, Fenton; C. Niendorf, Colon; E. E. Ormsby, Cilo; C. H. Patterson, St. John's; W. J. Reid, Port Huron; J. H. Scott, Carland, O.; L. C. Smith, West Branch; V. Homar, Fowlerville; L. P Vogel, Chelsea; E. Wallace, Detroit; F. W. Withelm, Bay City; P. Whitmore, South Haven; W D. Hammond, Au Sable; R. H. Leece, Munith; W. B. Winthrow, Oscoda; F. G. Thatcher, Nashville.

The next meeting of the board for the examination of candidates will be held at Saginaw on the second Tuesday of January, 1894.

The board adopted a resolution requiring all applicants for examination in the future, as registered pharmacists, to have had at least three years' actual experience in a drug store where physicians' prescriptions are compounded; and applicants for certificates as registered assistants must have had two years' actual experience. One month in a college of pharmacy will be counted as two months' experience in a store, provided the applicants have had at least four months' actual experience in a drug store under the supervision of a registered pharmacist. This resolution will not affect applications now on file with the board, upon which applicants are still entitled to examination.

MASSACHUSETTS COLLEGE OF PHARMACY has organized a course of twenty exercises in medical pharmacy which will be given at the college on Thursday evenings, beginning November 23, 1893, provided ten or more students apply for it. This course has been devised and arranged especially for medical students, and will consist of brief lectures and demonstrations, followed by exercises in the pharmaceutical laboratory, at which the student will prepare types of the various medicinal preparations, the whole to occupy two or three hours per evening, at least three-fourths of which time will be spent in the laboratory. The prescription will be treated from a pharmaceutical standpoint, and will include such operations and demonstrations as will familiarize the student with the appearance and physical properties of the more important remedies and preparations, the best methods of preparing and combining them, their limitations, incompatibilities, etc., and will thus enable the prescriber to more intelligently combine or disguise remedies for administration, and to judge of the chemical or pharmaceutical value of preparations offered by manufacturers or others. The fee for the course is $25.

THE DELAWARE STATE BOARD OF PHARMACY held its annual meeting on November 9, at Dover. The full board, consisting of Dr. W. H. Cooper, Clarence D. Sypherd, Dr. O. G. Robinson, J. Harvey Spruance and Erdman Hoffman, was in attendance. After some routine business, the following officers were re-elected: Dr. Cooper, president; Mr. Sypherd, secretary and treasurer. The board has decided to strictly enforce the law upon all persons not complying.

NEW YORK CITY BOARD OF PHARMACY.—At the last examination the following passed:

Geo E. Crosby, Frederick Engel, Salomon Mogilewich, Samuel Wexler, Joseph Kahn, Abr. Benjamin and Geo. C. Frolich. During the month eighteen pharmacists were registered. The next examination will be held at the college on December 11, at 9 A.M.

## Candy Exposition.

Druggists will find much to interest them in the Candy Exposition now being held at Lenox Lyceum, this city. Hance Brothers & White, of Philadelphia, have a most attractive exhibit of confection specialties shown in a Japanese booth, which is, perhaps, the most distinctive booth, artistic and otherwise, in the entire exposition. Everything about it suggests Japan, from the imitation frogs made of cotton by the Japanese peasantry to the now well known "Frog in your Throat." So great an attraction has this stand been that special officers were required to keep the crowds who flocked around it in order.

Another exhibit of special interest is that of the Walter M. Lowney Co., in which is shown chocolate bon bons of the different qualities—superfine, light and dark. The firm is represented by E. W. Dunstan, of 8 College Place, New York. Hickock & Johnson, wholesale druggists, New York, exhibit an extensive assortment of confectioners' colors, as well as essential oils, extracts, spices and general confectionery supplies. Wood & Selick, 36 and 38 Hudson street, New York, have an attractive display of fine confectionery, colors and essential oils. One of the attendants at this exhibit who was asked if the colors exhibited were of mineral origin replied: "I guess they are mineral colors, for if they were artificial, they would be poisonous, you know!" The Crown Cordial and Extract Co. was represented at the exposition by one of its most genial salesmen, R. F. Allison. He is, perhaps, the best known salesman on the road and will certainty bear the palm as the jolliest. The exposition authorities owe him more than an acknowledgment for his many services in the interest of visitors.

## The Scates Plan.

The Scates Medical Co., of Westbrook, Me., are introducing their remedies through the assistance of the druggists in a novel way, and in a way that makes it interesting to druggists.

The stock of the company is divided into preferred and common shares of $10 each. The common stock is entitled to one-quarter of the profits, and is set aside to be used as follows:

Each druggist ordering for the first time goods to the amount of $10 or more, receives an amount of stock equal to his purchase *free*. If the order is $10, he receives one share, $20 two shares, and so on. This stock is non-assessable.

Did you ever stop to think that your influence behind the counter was worth so much cold cash to the manufacturer? This is a fact, and why should you not be paid for it?

They state that their stock is already earning a dividend, and as their sales increase their dividend will increase materially, and add very much to the par value of the stock. They claim to have the goods, the style, the scheme to make them sell, and they want the assistance of live druggists.

The directors of this company are Hon. Fred. E. Richards, Hon. Leander Valentine, Russell D. Woodman, Lemuel Lane, N. A. Brown and J. C. Scates.

Mr. Scates, the manager, has been in the drug trade in Westbrook for nearly twenty years, is an experienced and competent pharmacist, and is highly recommended by the wholesale druggists of Portland. Their specialties are Vi-tal-ized Tonic, Lax-ive and Tea Pills.

They do not claim to stock up a druggist with a lot of the goods and leave it entirely with him to sell them, but they co-operate with each druggist or agent by sending circulars direct to customers whose names are furnished by the druggist. In these circulars they inclose a card which is good for a sample on presentation to the druggist whose name is specified on the card.

Mr. Scates being a druggist himself fully appreciates the assistance that the druggists can render in selling prize goods and instead of spending large sums o money in advertising to the public, they propose to share that money with such druggists as will take hold of their goods and push them. Their plan is certainly well planned, and it has every evidence of sincerity, backed by men of integrity and financial responsibility, and from a personal call upon this concern we recommend our readers to correspond with them with a view to accepting agencies.

## A Profitable Line.

In these times of cut prices it is a great joy to find something that is not cut. The truss business has so for generally escaped the slaughter, and consequently there is money to be made in handling them, if you handle the right kind. The "Champion" is the right kind, and the Philadelphia Truss Co., P. O. Box 1207, can give you some valuable pointers on how to handle the truss business so as to make it profitable, if you will mention the AMERICAN DRUGGIST when writing them.

## A Tablet Machine for a Dollar and a Half.

The trouble which the tablet triturate people are making for the drug trade can be obviated by "making them yourself." Heretofore this has been impracticable on account of the expense of machinery. This difficulty is surmounted by the cheapness of the machines of the American Triturate Mold Co., 1130 South Twelfth street, Philadelphia Pa. Write them for free descriptive circular, mentioning this paper.

## Dead Stock.

How to get rid of dead stock is a very important problem to solve, particularly at this season. What is dead stock in one section may be very good stock in another if the druggist only knew where that was. This knowledge can be had by applying to Ashton M. Boney, 28 Gold street, New York city. He makes a business of buying and selling all lines of goods. When writing mention this journal.

## A Close Buyer.

A. Ashfield Baker, 140 William street, has a happy faculty of knowing just where to get the finest thing in druggists' sundries at the lowest prices. He gives his customers the benefit of this knowledge, and this without any expense to them. Do you need any pill boxes, tooth brushes, fancy holiday goods? Inquire of him what he can do for you, and when doing it say we suggested it.